

SEQUENCE LISTING

<110> Goldsbrough, Andrew
Colliver, Steve

<120> Isoforms of Starch Branching Enzyme II (SBE-IIA and SBE-IIB) From
Wheat

<130> 11951.0005.PCUS00 MSIB:005

<140> 09/786,480

<141> 2002-06-24

<150> PCT/GB99/03011

<151> 1999-09-09

<150> EP 98307337.0

<151> 1998-09-10

<160> 55

<170> PatentIn version 3.1

<210> 1

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<212> DNA

<213> Triticum aestivum

<220>

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<222> (2036)..(2270)

<223> N = any nucleotide

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 <222> (675)..(746)
 <223> Xaa = any amino acid

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 35 40 45

Asp Ser Ile Pro Ala Trp Ile Lys Tyr Ser Val Gln Thr Pro Gly Asp
 50 55 60

Ile Pro Tyr Asn Gly Ile Tyr Tyr Asp Pro Pro Glu Glu Glu Lys Tyr
 65 70 75 80

Val Phe Lys His Pro Gln Pro Lys Arg Pro Lys Ser Leu Arg Ile Tyr
 85 90 95

Glu Thr His Val Gly Met Ser Ser Pro Glu Pro Lys Ile Asn Thr Tyr
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Ala Asn Phe Arg Asp Glu Val Leu Pro Arg Ile Lys Arg Leu Gly Tyr
 115 120 125

Asn Ala Val Gln Ile Met Ala Ile Gln Glu His Ser Tyr Tyr Gly Ser
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Phe Gly Tyr His Val Thr Asn Phe Phe Ala Pro Ser Ser Arg Phe Gly
 145 150 155 160

Ser Pro Glu Asp Leu Lys Ser Leu Ile Asp Arg Ala His Glu Leu Gly
 165 170 175

Leu Val Val Leu Met Asp Val Val His Ser His Ala Ser Asn Asn Thr
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 195 200 205

Gly Gly Ser Arg Gly His His Trp Met Trp Asp Ser Arg Val Phe Asn

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Thr	Ile	Gly	Glu	Asp	Val	Ser	Gly	Met	Pro	Thr	Phe	Ala	Leu	Pro	Val
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Gln	Val	Gly	Gly	Val	Gly	Phe	Asp	Tyr	Arg	Leu	His	Met	Ala	Val	Ala
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Lys	His	Glu	Glu	Asp	Lys	Val	Ile	Val	Phe	Glu	Lys	Gly	Asp	Leu	Val

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Thr	Ser	Asp	Cys	Gln	His	Asp	Asn	Arg	Pro	His	Ser	Phe	Ser	Val	Tyr
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Cys	Ser	Ile	Arg	Met	His	Ala	Val	Val	Ala	Ser	Thr	Ser	Lys	Lys	Lys
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Asn	Glu	Ser	Trp	Ile	Asp	Lys	Thr	Thr	Cys	Ala	Leu	Cys	Ser	Gln	Ile
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Pro	Arg	Ala	Leu	Trp	Arg	Lys	Asn	Ala	His	Leu	Cys	Tyr	Phe	Met	Asp
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Gln	Gly	Xaa	Asn	Leu	Pro	Gln	Xaa	Pro	Leu	Phe	Phe	Leu	Lys	Gly	Gly
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Phe	Xaa	Phe	Asp	Ser	Thr	Val	Phe	Leu	Lys	Ser	Thr	Cys	Cys	Leu	Leu
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<210> 3
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 <213> Triticum aestivum

<220>
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 <222> (77)..(1036)
 <223> N = any nucleotide

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atgggaaatg agttcgggca tcctgaatgg atagactttc caagaggccc acaagtactt      180
ccaagtggta agttcatccc aggaaacagc aacagttacg acaaatgccg tcgaagattt      240
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cacgaggaag ataaggtgat cgtgtttgaa aaaggggact tggatattgt gttcaacttc      420
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aaccattgct agtgtcctct aaattgacag tttagcatag aggttttact tttgtatctt      960
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<210> 4
<211> 1087
<212> DNA
<213> Triticum aestivum

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<220>
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<223> N = any nucleotide

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atgggaaatg agttcgggca tcctgaatgg atagactttc caagaggccc acaagtactt      180

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ccaactggta agttcatccc nngaaacaac aacagttacg acaaatgccg tcgaaaattt 240
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<210> 5
<211> 1120
<212> DNA
<213> Triticum aestivum

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<220>
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gacctgggtg atgcagaatt tcttaggtat catggtatgc agcagtttga tcaggcaatg 300
cagcatcttg aggaaaaata tggttttatg acatcagacc accagtacgt ttctcggaaa 360

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catgaggaag ataaggtgat cgtgtttgaa aaaggggact tggatattgt gttcaacttc 420
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gtggtccttag actcggacgc tggactcttt ggtggatttg gtaggatcca tcacactgca 540
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agnaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1120

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<210> 6
<211> 979
<212> DNA
<213> Triticum aestivum

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tcattgggaaa tgagtttggg catcctgaat ggatagattt tccaagaggc ccacaaactc 180
ttccaaccgg caaagttctc cctggaaata acaatagtta tgataaatgc cgccatagat 240
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aacatgagga agataaggtg atcttcttcg aaagaggaga tttggtattt gttttcaact 420
tccactggag caatagcttt tttgactacc gtgttggttg ttccaagcct gggaagtaca 480
aggtggcctt ggactccgac gatgcactct ttggtggatt cagcaggctt gatcatgatg 540

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tcgactactt cacaaccgaa catccgcatg acaacaggcc gcactctttc tcggtgtaca      600
ctccgagcag aactgcggtc gtgtatgccc ttacagagta agaaccagca gcggcttggt      660
acaaggcaaa gagagaactc cagagagctc gtggatcgtg agcgaagcga cgggcaacgg      720
cgcgaggctg ctccaagcgc catgactggg aggggatcgt gcntcttccc cagatgccag      780
gaggagcaga tggataggta gcttgttggt gagcgctcga aagaaaatgg acgggcctgg      840
gtgtttgttg tgctgcactg aaccctcctc ctatcttgca cattcccggg tgtttttgta      900
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<210> 7
<211> 212
<212> PRT
<213> Triticum aestivum

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<400> 7

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Gly Gly Glu Gly Tyr Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro
          35              40              45
Glu Trp Ile Asp Phe Pro Arg Gly Pro Gln Val Leu Pro Ser Gly Lys
  50              55              60
Phe Ile Pro Gly Asn Ser Asn Ser Tyr Asp Lys Cys Arg Arg Arg Phe
65              70              75              80
Asp Leu Gly Asp Ala Glu Phe Leu Arg Tyr His Gly Met Gln Gln Phe
                85              90              95
Asp Gln Ala Met Gln His Leu Glu Glu Lys Tyr Gly Phe Met Thr Ser
                100             105             110
Asp His Gln Tyr Val Ser Arg Lys His Glu Glu Asp Lys Val Ile Val
          115             120             125
Phe Glu Lys Gly Asp Leu Val Phe Val Phe Asn Phe His Trp Ser Asn
          130             135             140
Ser Tyr Phe Asp Tyr Arg Val Gly Cys Leu Lys Pro Gly Lys Tyr Lys
145              150              155              160
Val Val Leu Asp Ser Asp Ala Gly Leu Phe Gly Gly Phe Gly Arg Ile
          165              170              175

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His His Thr Ala Glu His Phe Thr Ser Asp Cys Gln His Asp Asn Arg
 180 185 190

Pro His Ser Phe Ser Val Tyr Thr Pro Ser Arg Thr Cys Val Val Tyr
 195 200 205

Ala Pro Met Asn
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<210> 8
 <211> 378
 <212> DNA
 <213> Triticum aestivum

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 atagacaaga caacatgatg ttgtggcgtg tgctcccaat cccagggcg ttgtgaagaa 180
 aacatgctca tctgtgttat gattttatgg atcagcgacg aaacttcccc caaataccca 240
 tgctcctta aatctttgtg gccgtaaacc attgctagtg tcctctaaat tgacagttta 300
 gcatagaggt tttacttttg tatcttcttt ttgacagtta gactttattc ctcaaataat 360
 cgaccagtcg tttactcg 378

<210> 9
 <211> 449
 <212> DNA
 <213> Triticum aestivum

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 <223> N = any nucleotide

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 atagacaaga caacatgatg ttgtgctgtg tgctcccaat cccagggng ttgtgaagaa 180
 aacatgctca tctgtgttat tttatggatc agggangaaa cctcccccaa anacccttt 240
 tttttttgaa agnggatag gccccggtn tctgcatntg gatgcctcct taaatntttg 300
 tagccataaa ccattgctag tgcctntaa attgacagtt tagaatagn gttntacttt 360
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aagntgagaa ataaaatcag agattgnag

449

<210> 10
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 <212> DNA
 <213> Triticum aestivum

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 <222> (178)..(223)
 <223> N = any nucleotide

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 ctggatagac aagacaacat gatgatgtgc tctgtgctcc caaattccca gggcgttgng 180
 nggaaaacat gctcatctgt gttatcattt tatggatcag ngnggaaacc tcccccaa 240
 acccatgcct ccttaaaactt ttgtgggtcct aaaccatggc tactatcctc taaattggca 300
 gtttagcata gaggttttac ttttgtaa 360
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 caaaagct 428

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 <213> Triticum aestivum

<400> 11

Phe	Gly	Val	Trp	Glu	Met	Phe	Leu	Pro	Asn	Asn	Ala	Asp	Gly	Ser	Pro	1	5	10	15
Pro	Ile	Pro	His	Gly	Ser	Arg	Val	Lys	Val	Arg	Met	Asp	Thr	Pro	Ser	20	25	30	
Gly	Ile	Lys	Asp	Ser	Ile	Pro	Ala	Trp	Ile	Lys	Tyr	Ser	Val	Gln	Thr	35	40	45	
Pro	Gly	Asp	Ile	Pro	Tyr	Asn	Gly	Ile	Tyr	Tyr	Asp	Pro	Pro	Glu	Glu	50	55	60	
Glu	Lys	Tyr	Val	Phe	Lys	His	Pro	Gln	Pro	Lys	Arg	Pro	Lys	Ser	Leu	65	70	75	80
Arg	Ile	Tyr	Glu	Thr	His	Val	Gly	Met	Ser	Ser	Pro	Glu	Pro	Lys	Ile	85	90	95	

Asn	Thr	Tyr	Ala	Asn	Phe	Arg	Asp	Glu	Val	Leu	Pro	Arg	Ile	Lys	Arg			
			100					105					110					
Leu	Gly	Tyr	Asn	Ala	Val	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	Ser	Tyr			
		115					120					125						
Tyr	Gly	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser			
	130					135					140							
Arg	Phe	Gly	Ser	Pro	Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp	Arg	Ala	His			
145					150					155					160			
Glu	Leu	Gly	Leu	Val	Val	Leu	Met	Asp	Val	Val	His	Ser	His	Ala	Ser			
			165						170					175				
Asn	Asn	Thr	Leu	Asp	Gly	Leu	Asn	Gly	Phe	Asp	Gly	Thr	Asp	Thr	His			
			180					185					190					
Tyr	Phe	His	Gly	Gly	Ser	Arg	Gly	His	His	Trp	Met	Trp	Asp	Ser	Arg			
		195					200					205						
Val	Phe	Asn	Tyr	Gly	Asn	Lys	Glu	Val	Ile	Arg	Phe	Leu	Leu	Ser	Asn			
	210					215					220							
Ala	Arg	Trp	Trp	Leu	Glu	Glu	Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp			
225					230					235					240			
Gly	Ala	Thr	Ser	Met	Met	Tyr	Thr	His	His	Gly	Leu	Gln	Val	Thr	Phe			
				245					250					255				
Thr	Gly	Ser	Tyr	His	Glu	Tyr	Phe	Gly	Phe	Ala	Thr	Asp	Val	Asp	Ala			
			260					265					270					
Val	Val	Tyr	Leu	Met	Leu	Met	Asn	Asp	Leu	Ile	His	Gly	Phe	Tyr	Pro			
		275					280					285						
Glu	Ala	Val	Thr	Ile	Gly	Glu	Asp	Val	Ser	Gly	Met	Pro	Thr	Phe	Ala			
	290					295					300							
Leu	Pro	Val	Gln	Val	Gly	Gly	Val	Gly	Phe	Asp	Tyr	Arg	Leu	His	Met			
305					310					315					320			
Ala	Val	Ala	Asp	Lys	Trp	Ile	Glu	Leu	Leu	Lys	Gly	Asn	Asp	Glu	Ala			
				325				330					335					
Trp	Glu	Met	Gly	Asn	Ile	Val	His	Thr	Leu	Thr	Asn	Arg	Arg	Trp	Pro			
			340					345					350					
Glu	Lys	Cys	Val	Thr	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ala	Leu	Val	Gly			
		355					360					365						
Asp	Lys	Thr	Ile	Ala	Phe	Trp	Leu	Met	Asp	Lys	Asp	Met	Tyr	Asp	Phe			
	370					375					380							
Met	Ala	Leu	Asn	Gly	Pro	Ser	Thr	Pro	Ser	Ile	Asp	Arg	Gly	Ile	Ala			
385					390					395					400			

Leu His Lys Met Ile Arg Leu Ile Thr Met Gly Leu Gly Gly Glu Gly
405 410 415

Tyr Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro Glu Trp Ile Asp
420 425 430

Phe Pro Arg Gly Pro Gln Val Leu Pro Thr Gly Lys Phe Ile Pro Gly
435 440 445

Asn Asn Asn Ser Tyr Asp Lys Cys Arg Arg Arg Phe Asp Gln Gly Asp
450 455 460

Ala Glu Phe Leu Arg Tyr His Gly Met Gln Gln Phe Asp Gln Ala Met
465 470 475 480

Gln His Leu Glu Glu Lys Tyr Gly Phe Met Thr Ser Asp His Gln Tyr
485 490 495

Val Ser Arg Lys His Glu Glu Asp Lys Val Ile Val Phe Glu Lys Gly
500 505 510

Asp Leu Val Phe Val Phe Asn Phe His Trp Ser Asn Ser Tyr Phe Asp
515 520 525

Tyr Arg Val Gly Cys Leu Lys Pro Gly Lys Tyr Lys Val Val Leu Asp
530 535 540

Ser Asp Ala Gly Leu Phe Gly Gly Phe Gly Arg Ile His His Thr Ala
545 550 555 560

Glu His Phe Thr Ser Asp Cys Gln His Asp Asn Arg Pro His Ser Phe
565 570 575

Ser Val Tyr Thr Pro Ser Arg Thr Cys Val Val Tyr Ala Pro Met Asn
580 585 590

<210> 12

<211> 771

<212> PRT

<213> Triticum aestivum

<400> 12

Ser Arg Ala Ala Ser Pro Gly Lys Val Leu Val Pro Asp Gly Glu Ser
1 5 10 15

Asp Asp Leu Ala Ser Pro Ala Gln Pro Glu Glu Leu Gln Ile Pro Glu
20 25 30

Asp Ile Glu Glu Gln Thr Ala Glu Val Asn Met Thr Gly Gly Thr Ala
35 40 45

Glu Lys Leu Glu Ser Ser Glu Pro Thr Gln Gly Ile Val Glu Thr Ile
50 55 60

Thr Asp Gly Val Thr Lys Gly Val Lys Glu Leu Val Val Gly Glu Lys
65 70 75 80

Pro	Arg	Val	Val	Pro	Lys	Pro	Gly	Asp	Gly	Gln	Lys	Ile	Tyr	Glu	Ile		
				85					90					95			
Asp	Pro	Thr	Leu	Lys	Asp	Phe	Arg	Ser	His	Leu	Asp	Tyr	Arg	Tyr	Ser		
			100					105					110				
Glu	Tyr	Arg	Arg	Ile	Arg	Ala	Ala	Ile	Asp	Gln	His	Glu	Gly	Gly	Leu		
		115					120					125					
Glu	Ala	Phe	Ser	Arg	Gly	Tyr	Glu	Lys	Leu	Gly	Phe	Thr	Arg	Ser	Ala		
	130					135					140						
Glu	Gly	Ile	Thr	Tyr	Arg	Glu	Trp	Ala	Pro	Gly	Ala	His	Ser	Ala	Ala		
145					150					155					160		
Leu	Val	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Pro	Asn	Ala	Asp	Thr	Met	Thr		
				165					170					175			
Arg	Asp	Asp	Tyr	Gly	Val	Trp	Glu	Ile	Phe	Leu	Pro	Asn	Asn	Ala	Asp		
			180					185						190			
Gly	Ser	Pro	Ala	Ile	Pro	His	Gly	Ser	Arg	Val	Lys	Ile	Arg	Met	Asp		
		195					200					205					
Thr	Pro	Ser	Gly	Val	Lys	Asp	Ser	Ile	Ser	Ala	Trp	Ile	Lys	Phe	Ser		
	210					215					220						
Val	Gln	Ala	Pro	Gly	Glu	Ile	Pro	Phe	Asn	Gly	Ile	Tyr	Tyr	Asp	Pro		
225					230					235					240		
Pro	Glu	Glu	Glu	Lys	Tyr	Val	Phe	Gln	His	Pro	Gln	Pro	Lys	Arg	Pro		
				245					250					255			
Glu	Ser	Leu	Arg	Ile	Tyr	Glu	Ser	His	Ile	Gly	Met	Ser	Ser	Pro	Glu		
			260					265					270				
Pro	Lys	Ile	Asn	Ser	Tyr	Ala	Asn	Phe	Arg	Asp	Glu	Val	Leu	Pro	Arg		
		275					280					285					
Ile	Lys	Arg	Leu	Gly	Tyr	Asn	Ala	Val	Gln	Ile	Met	Ala	Ile	Gln	Glu		
	290					295					300						
His	Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn	Phe	Phe	Ala		
305					310					315					320		
Pro	Ser	Ser	Arg	Phe	Gly	Thr	Pro	Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp		
				325					330					335			
Arg	Ala	His	Glu	Leu	Gly	Leu	Ile	Val	Leu	Met	Asp	Ile	Val	His	Ser		
			340					345					350				
His	Ser	Ser	Asn	Asn	Thr	Leu	Asp	Gly	Leu	Asn	Gly	Phe	Asp	Gly	Thr		
		355					360					365					
Asp	Thr	His	Tyr	Phe	His	Gly	Gly	Pro	Arg	Gly	His	His	Trp	Met	Trp		
	370					375					380						

Asp Ser Arg Leu Phe Asn Tyr Gly Ser Trp Glu Val Leu Arg Phe Leu
 385 390 395 400
 Leu Ser Asn Ala Arg Trp Trp Leu Glu Glu Tyr Lys Phe Asp Gly Phe
 405 410 415
 Arg Phe Asp Gly Val Thr Ser Met Met Tyr Thr His His Gly Leu Gln
 420 425 430
 Met Thr Phe Thr Gly Asn Tyr Gly Glu Tyr Phe Gly Phe Ala Thr Asp
 435 440 445
 Val Asp Ala Val Val Tyr Leu Met Leu Val Asn Asp Leu Ile His Gly
 450 455 460
 Leu His Pro Asp Ala Val Ser Ile Gly Glu Asp Val Ser Gly Met Pro
 465 470 475 480
 Thr Phe Cys Ile Pro Val Pro Asp Gly Gly Val Gly Leu Asp Tyr Arg
 485 490 495
 Leu His Met Ala Val Ala Asp Lys Trp Ile Glu Leu Leu Lys Gln Ser
 500 505 510
 Asp Glu Ser Trp Lys Met Gly Asp Ile Val His Thr Leu Thr Asn Arg
 515 520 525
 Arg Trp Leu Glu Lys Cys Val Thr Tyr Ala Glu Ser His Asp Gln Ala
 530 535 540
 Leu Val Gly Asp Lys Thr Ile Ala Phe Trp Leu Met Asp Lys Asp Met
 545 550 555 560
 Tyr Asp Phe Met Ala Leu Asp Arg Pro Ser Thr Pro Arg Ile Asp Arg
 565 570 575
 Gly Ile Ala Leu His Lys Met Ile Arg Leu Val Thr Met Gly Leu Gly
 580 585 590
 Gly Glu Gly Tyr Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro Glu
 595 600 605
 Trp Ile Asp Phe Pro Arg Gly Pro Gln Thr Leu Pro Thr Gly Lys Val
 610 615 620
 Leu Pro Gly Asn Asn Asn Ser Tyr Asp Lys Cys Arg Arg Arg Phe Asp
 625 630 635 640
 Leu Gly Asp Ala Asp Phe Leu Arg Tyr His Gly Met Gln Glu Phe Asp
 645 650 655
 Gln Ala Met Gln His Leu Glu Glu Lys Tyr Gly Phe Met Thr Ser Glu
 660 665 670
 His Gln Tyr Val Ser Arg Lys His Glu Glu Asp Lys Val Ile Ile Phe
 675 680 685

Glu Arg Gly Asp Leu Val Phe Val Phe Asn Phe His Trp Ser Asn Ser
690 695 700

Phe Phe Asp Tyr Arg Val Gly Cys Ser Arg Pro Gly Lys Tyr Lys Val
705 710 715 720

Ala Leu Asp Ser Asp Asp Ala Leu Phe Gly Gly Phe Ser Arg Leu Asp
725 730 735

His Asp Val Asp Tyr Phe Thr Thr Glu His Pro His Asp Asn Arg Pro
740 745 750

Arg Ser Phe Ser Val Tyr Thr Pro Ser Arg Thr Ala Val Val Tyr Ala
755 760 765

Leu Thr Glu
770

<210> 13
<211> 797
<212> PRT
<213> Zea mays

<400> 13

Ser Cys Ala Gly Ala Pro Gly Lys Val Leu Val Pro Gly Gly Gly Ser
1 5 10 15

Asp Asp Leu Leu Ser Ser Ala Glu Pro Val Val Asp Thr Gln Pro Glu
20 25 30

Glu Leu Gln Ile Pro Glu Ala Glu Leu Thr Val Glu Lys Thr Ser Ser
35 40 45

Ser Pro Thr Gln Thr Thr Ser Ala Val Ala Glu Ala Ser Ser Gly Val
50 55 60

Glu Ala Glu Glu Arg Pro Glu Leu Ser Ser Glu Val Ile Gly Val Gly
65 70 75 80

Gly Thr Gly Gly Thr Lys Ile Asp Gly Ala Gly Ile Lys Ala Lys Ala
85 90 95

Pro Leu Val Glu Glu Lys Pro Arg Val Ile Pro Pro Pro Gly Asp Gly
100 105 110

Gln Arg Ile Tyr Glu Ile Asp Pro Met Leu Glu Gly Phe Arg Gly His
115 120 125

Leu Asp Tyr Arg Tyr Ser Glu Tyr Lys Arg Leu Arg Ala Ala Ile Asp
130 135 140

Gln His Glu Gly Gly Leu Asp Ala Phe Ser Arg Gly Tyr Glu Lys Leu
145 150 155 160

Gly	Phe	Thr	Arg	Ser	Ala	Glu	Gly	Ile	Thr	Tyr	Arg	Glu	Trp	Ala	Pro	165	170	175
Gly	Ala	Tyr	Ser	Ala	Ala	Leu	Val	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Pro	180	185	190
Asn	Ala	Asp	Ala	Met	Ala	Arg	Asn	Glu	Tyr	Gly	Val	Trp	Glu	Ile	Phe	195	200	205
Leu	Pro	Asn	Asn	Ala	Asp	Gly	Ser	Pro	Ala	Ile	Pro	His	Gly	Ser	Arg	210	215	220
Val	Lys	Ile	Arg	Met	Asp	Thr	Pro	Ser	Gly	Val	Lys	Asp	Ser	Ile	Pro	225	230	235
Ala	Trp	Ile	Lys	Phe	Ser	Val	Gln	Ala	Pro	Gly	Glu	Ile	Pro	Tyr	Asn	245	250	255
Gly	Ile	Tyr	Tyr	Asp	Pro	Pro	Glu	Glu	Glu	Lys	Tyr	Val	Phe	Lys	His	260	265	270
Pro	Gln	Pro	Lys	Arg	Pro	Lys	Ser	Leu	Arg	Ile	Tyr	Glu	Ser	His	Val	275	280	285
Gly	Met	Ser	Ser	Pro	Glu	Pro	Lys	Ile	Asn	Thr	Tyr	Ala	Asn	Phe	Arg	290	295	300
Asp	Glu	Val	Leu	Pro	Arg	Ile	Lys	Lys	Leu	Gly	Tyr	Asn	Ala	Val	Gln	305	310	315
Ile	Met	Ala	Ile	Gln	Glu	His	Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr	His	325	330	335
Val	Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Thr	Pro	Glu	Asp	340	345	350
Leu	Lys	Ser	Leu	Ile	Asp	Lys	Ala	His	Glu	Leu	Gly	Leu	Leu	Val	Leu	355	360	365
Met	Asp	Ile	Val	His	Ser	His	Ser	Ser	Asn	Asn	Thr	Leu	Asp	Gly	Leu	370	375	380
Asn	Gly	Phe	Asp	Gly	Thr	Asp	Thr	His	Tyr	Phe	His	Gly	Gly	Pro	Arg	385	390	395
Gly	His	His	Trp	Met	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Gly	Ser	Trp	405	410	415
Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Ala	Arg	Trp	Trp	Leu	Glu	Glu	420	425	430
Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Met	Tyr	435	440	445
Thr	His	His	Gly	Leu	Gln	Val	Thr	Phe	Thr	Gly	Asn	Tyr	Gly	Glu	Tyr	450	455	460

Phe 465	Gly	Phe	Ala	Thr	Asp 470	Val	Asp	Ala	Val	Val 475	Tyr	Leu	Met	Leu	Val 480
Asn	Asp	Leu	Ile	Arg 485	Gly	Leu	Tyr	Pro	Glu 490	Ala	Val	Ser	Ile	Gly 495	Glu
Asp	Val	Ser	Gly 500	Met	Pro	Thr	Phe	Cys 505	Ile	Pro	Val	Gln	Asp 510	Gly	Gly
Val	Gly 515	Phe	Asp	Tyr	Arg	Leu	His 520	Met	Ala	Val	Pro	Asp 525	Lys	Trp	Ile
Glu 530	Leu	Leu	Lys	Gln	Ser	Asp 535	Glu	Tyr	Trp	Glu	Met 540	Gly	Asp	Ile	Val
His 545	Thr	Leu	Thr	Asn	Arg 550	Arg	Trp	Leu	Glu	Lys 555	Cys	Val	Thr	Tyr	Cys 560
Glu	Ser	His	Asp	Gln 565	Ala	Leu	Val	Gly	Asp 570	Lys	Thr	Ile	Ala	Phe	Trp 575
Leu	Met	Asp	Lys 580	Asp	Met	Tyr	Asp	Phe 585	Met	Ala	Leu	Asp	Arg 590	Pro	Ser
Thr	Pro	Arg 595	Ile	Asp	Arg	Gly	Ile 600	Ala	Leu	His	Lys	Met 605	Ile	Arg	Leu
Val 610	Thr	Met	Gly	Leu	Gly	Gly 615	Glu	Gly	Tyr	Leu	Asn 620	Phe	Met	Gly	Asn
Glu 625	Phe	Gly	His	Pro	Glu 630	Trp	Ile	Asp	Phe	Pro 635	Arg	Gly	Pro	Gln	Ser 640
Leu	Pro	Asn	Gly	Ser 645	Val	Ile	Pro	Gly	Asn 650	Asn	Asn	Ser	Phe	Asp 655	Lys
Cys	Arg	Arg	Arg	Phe 660	Asp	Leu	Gly	Asp 665	Ala	Asp	Tyr	Leu	Arg 670	Tyr	Arg
Gly	Met	Gln 675	Glu	Phe	Asp	Gln	Ala 680	Met	Gln	His	Leu	Glu 685	Gly	Lys	Tyr
Glu 690	Phe	Met	Thr	Ser	Asp	His 695	Ser	Tyr	Val	Ser	Arg 700	Lys	His	Glu	Glu
Asp 705	Lys	Val	Ile	Ile	Phe 710	Glu	Arg	Gly	Asp	Leu 715	Val	Phe	Val	Phe	Asn 720
Phe	His	Trp	Ser	Asn 725	Ser	Tyr	Phe	Asp 730	Tyr	Arg	Val	Gly	Cys	Phe	Lys 735
Pro	Gly	Lys	Tyr 740	Lys	Ile	Val	Leu	Asp 745	Ser	Asp	Asp	Gly	Leu 750	Phe	Gly
Gly	Phe	Ser 755	Arg	Leu	Asp	His 760	Asp	Ala	Glu	Tyr	Phe	Thr 765	Ala	Asp	Trp

Pro His Asp Asn Arg Pro Cys Ser Phe Ser Val Tyr Ala Pro Ser Arg
 770 775 780

Thr Ala Val Val Tyr Ala Pro Ala Gly Ala Glu Asp Glu
 785 790 795

<210> 14
 <211> 747
 <212> PRT
 <213> Zea mays

<400> 14

Ala Ala Ala Ala Ala Arg Lys Ala Val Met Val Pro Glu Gly Glu Asn
 1 5 10 15

Asp Gly Leu Ala Ser Arg Ala Asp Ser Ala Gln Phe Gln Ser Asp Glu
 20 25 30

Leu Glu Val Pro Asp Ile Ser Glu Glu Thr Thr Cys Gly Ala Gly Val
 35 40 45

Ala Asp Ala Gln Ala Leu Asn Arg Val Arg Val Val Pro Pro Pro Ser
 50 55 60

Asp Gly Gln Lys Ile Phe Gln Ile Asp Pro Met Leu Gln Gly Tyr Lys
 65 70 75 80

Tyr His Leu Glu Tyr Arg Tyr Ser Leu Tyr Arg Arg Ile Arg Ser Asp
 85 90 95

Ile Asp Glu His Glu Gly Gly Leu Glu Ala Phe Ser Arg Ser Tyr Glu
 100 105 110

Lys Phe Gly Phe Asn Ala Ser Ala Glu Gly Ile Thr Tyr Arg Glu Trp
 115 120 125

Ala Pro Gly Ala Phe Ser Ala Ala Leu Val Gly Asp Val Asn Asn Trp
 130 135 140

Asp Pro Asn Ala Asp Arg Met Ser Lys Asn Glu Phe Gly Val Trp Glu
 145 150 155 160

Ile Phe Leu Pro Asn Asn Ala Asp Gly Thr Ser Pro Ile Pro His Gly
 165 170 175

Ser Arg Val Lys Val Arg Met Asp Thr Pro Ser Gly Ile Lys Asp Ser
 180 185 190

Ile Pro Ala Trp Ile Lys Tyr Ser Val Gln Ala Pro Gly Glu Ile Pro
 195 200 205

Tyr Asp Gly Ile Tyr Tyr Asp Pro Pro Glu Glu Val Lys Tyr Val Phe
 210 215 220

Arg His Ala Gln Pro Lys Arg Pro Lys Ser Leu Arg Ile Tyr Glu Thr

225					230					235					240
His	Val	Gly	Met	Ser	Ser	Pro	Glu	Pro	Lys	Ile	Asn	Thr	Tyr	Val	Asn
				245					250					255	
Phe	Arg	Asp	Glu	Val	Leu	Pro	Arg	Ile	Lys	Lys	Leu	Gly	Tyr	Asn	Ala
			260					265					270		
Val	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	Ser	Tyr	Tyr	Gly	Ser	Phe	Gly
		275					280					285			
Tyr	His	Val	Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Thr	Pro
	290					295					300				
Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp	Arg	Ala	His	Glu	Leu	Gly	Leu	Leu
305					310					315					320
Val	Leu	Met	Asp	Val	Val	His	Ser	His	Ala	Ser	Ser	Asn	Thr	Leu	Asp
				325					330					335	
Gly	Leu	Asn	Gly	Phe	Asp	Gly	Thr	Asp	Thr	His	Tyr	Phe	His	Ser	Gly
			340					345					350		
Pro	Arg	Gly	His	His	Trp	Met	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Gly
		355					360					365			
Asn	Trp	Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Ala	Arg	Trp	Trp	Leu
	370					375					380				
Glu	Glu	Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met
385					390					395					400
Met	Tyr	Thr	His	His	Gly	Leu	Gln	Val	Thr	Phe	Thr	Gly	Asn	Phe	Asn
				405					410					415	
Glu	Tyr	Phe	Gly	Phe	Ala	Thr	Asp	Val	Asp	Ala	Val	Val	Tyr	Leu	Met
			420					425					430		
Leu	Val	Asn	Asp	Leu	Ile	His	Gly	Leu	Tyr	Pro	Glu	Ala	Val	Thr	Ile
		435					440					445			
Gly	Glu	Asp	Val	Ser	Gly	Met	Pro	Thr	Phe	Ala	Leu	Pro	Val	His	Asp
						455					460				
Gly	Gly	Val	Gly	Phe	Asp	Tyr	Arg	Met	His	Met	Ala	Val	Ala	Asp	Lys
465					470					475					480
Trp	Ile	Asp	Leu	Leu	Lys	Gln	Ser	Asp	Glu	Thr	Trp	Lys	Met	Gly	Asp
				485					490					495	
Ile	Val	His	Thr	Leu	Thr	Asn	Arg	Arg	Trp	Leu	Glu	Lys	Cys	Val	Thr
			500					505					510		
Tyr	Ala	Glu	Ser	His	Asp	Gln	Ala	Leu	Val	Gly	Asp	Lys	Thr	Ile	Ala
		515					520					525			
Phe	Trp	Leu	Met	Asp	Lys	Asp	Met	Tyr	Asp	Phe	Met	Ala	Leu	Asp	Arg

530					535					540					
Pro	Ser	Thr	Pro	Thr	Ile	Asp	Arg	Gly	Ile	Ala	Leu	His	Lys	Met	Ile
545					550					555					560
Arg	Leu	Ile	Thr	Met	Gly	Leu	Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	Met
				565					570					575	
Gly	Asn	Glu	Phe	Gly	His	Pro	Glu	Trp	Ile	Asp	Phe	Pro	Arg	Gly	Pro
			580					585					590		
Gln	Arg	Leu	Pro	Ser	Gly	Lys	Phe	Ile	Pro	Gly	Asn	Asn	Asn	Ser	Tyr
		595					600					605			
Asp	Lys	Cys	Arg	Arg	Arg	Phe	Asp	Leu	Gly	Asp	Ala	Asp	Tyr	Leu	Arg
	610					615					620				
Tyr	His	Gly	Met	Gln	Glu	Phe	Asp	Gln	Ala	Met	Gln	His	Leu	Glu	Gln
625				630					635						640
Lys	Tyr	Glu	Phe	Met	Thr	Ser	Asp	His	Gln	Tyr	Ile	Ser	Arg	Lys	His
				645					650					655	
Glu	Glu	Asp	Lys	Val	Ile	Val	Phe	Glu	Lys	Gly	Asp	Leu	Val	Phe	Val
			660					665					670		
Phe	Asn	Phe	His	Cys	Asn	Asn	Ser	Tyr	Phe	Asp	Tyr	Arg	Ile	Gly	Cys
		675					680					685			
Arg	Lys	Pro	Gly	Val	Tyr	Lys	Val	Val	Leu	Asp	Ser	Asp	Ala	Gly	Leu
	690					695					700				
Phe	Gly	Gly	Phe	Ser	Arg	Ile	His	His	Ala	Ala	Glu	His	Phe	Thr	Ala
705				710					715						720
Asp	Cys	Ser	His	Asp	Asn	Arg	Pro	Tyr	Ser	Phe	Ser	Val	Tyr	Thr	Pro
				725				730						735	
Ser	Arg	Thr	Cys	Val	Val	Tyr	Ala	Pro	Val	Glu					
			740				745								

<210> 15
 <211> 50
 <212> PRT
 <213> Hordeum vulgare

<400> 15

Asn	Asp	Leu	Gly	Ile	Trp	Glu	Ile	Phe	Leu	Pro	Asn	Asn	Ala	Asp	Gly
1				5					10					15	
Ser	Pro	Pro	Ile	Pro	His	Gly	Ser	Arg	Val	Lys	Val	Arg	Met	Asp	Thr
			20					25					30		
Pro	Ser	Gly	Thr	Lys	Asp	Ser	Ile	Pro	Ala	Trp	Ile	Lys	Phe	Ser	Val
		35					40					45			

Gln Ala
50

<210> 16
<211> 50
<212> PRT
<213> Hordeum vulgare

<400> 16

Asp	Asp	Tyr	Gly	Val	Trp	Glu	Ile	Phe	Leu	Pro	Asn	Asn	Ala	Asp	Gly
1				5					10					15	
Ser	Pro	Ala	Ile	Pro	His	Gly	Ser	Arg	Val	Lys	Ile	Arg	Met	Asp	Thr
			20					25					30		
Pro	Ser	Gly	Val	Lys	Asp	Ser	Ile	Ser	Ala	Trp	Ile	Lys	Phe	Ser	Val
		35					40					45			

Gln Ala
50

<210> 17
<211> 760
<212> PRT
<213> Oryza sativa

<400> 17

Ala	Ala	Gly	Ala	Ser	Gly	Glu	Val	Met	Ile	Pro	Glu	Gly	Glu	Ser	Asp
1				5					10					15	
Gly	Met	Pro	Val	Ser	Ala	Gly	Ser	Asp	Asp	Leu	Gln	Leu	Pro	Ala	Leu
			20					25					30		
Asp	Asp	Glu	Leu	Ser	Thr	Glu	Val	Gly	Ala	Glu	Val	Glu	Ile	Glu	Ser
		35					40					45			
Ser	Gly	Ala	Ser	Asp	Val	Glu	Gly	Val	Lys	Arg	Val	Val	Glu	Glu	Leu
	50					55					60				
Ala	Ala	Glu	Gln	Lys	Pro	Arg	Val	Val	Pro	Pro	Thr	Gly	Asp	Gly	Gln
65					70				75					80	
Lys	Ile	Phe	Gln	Met	Asp	Ser	Met	Leu	Asn	Gly	Tyr	Lys	Tyr	His	Leu
			85						90					95	
Glu	Tyr	Arg	Tyr	Ser	Leu	Tyr	Arg	Arg	Leu	Arg	Ser	Asp	Ile	Asp	Gln
			100					105					110		
Tyr	Glu	Gly	Gly	Leu	Glu	Thr	Phe	Ser	Arg	Gly	Tyr	Glu	Lys	Phe	Gly
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Phe	Asn	His	Ser	Ala	Glu	Gly	Val	Thr	Tyr	Arg	Glu	Trp	Ala	Pro	Gly

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Ala	His	Ser	Ala	Ala	Leu	Val	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Pro	Asn
145					150					155					160
Ala	Asp	Arg	Met	Ser	Lys	Asn	Glu	Phe	Gly	Val	Trp	Glu	Ile	Phe	Leu
				165					170					175	
Pro	Asn	Asn	Ala	Asp	Gly	Ser	Ser	Pro	Ile	Pro	His	Gly	Ser	Arg	Val
			180					185					190		
Lys	Val	Arg	Met	Glu	Thr	Pro	Ser	Gly	Ile	Lys	Asp	Ser	Ile	Pro	Ala
		195					200					205			
Trp	Ile	Lys	Tyr	Ser	Val	Gln	Ala	Ala	Gly	Glu	Ile	Pro	Tyr	Asn	Gly
	210					215					220				
Ile	Tyr	Tyr	Asp	Pro	Pro	Glu	Glu	Glu	Lys	Tyr	Ile	Phe	Lys	His	Pro
225					230					235					240
Gln	Pro	Lys	Arg	Pro	Lys	Ser	Leu	Arg	Ile	Tyr	Glu	Thr	His	Val	Gly
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Met	Ser	Ser	Thr	Glu	Pro	Lys	Ile	Asn	Thr	Tyr	Ala	Asn	Phe	Arg	Asp
			260					265					270		
Glu	Val	Leu	Pro	Arg	Ile	Lys	Lys	Leu	Gly	Tyr	Asn	Ala	Val	Gln	Ile
		275					280					285			
Met	Ala	Ile	Gln	Glu	His	Ala	Tyr	Tyr	Gly	Ser	Phe	Gly	Tyr	His	Val
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Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Thr	Pro	Glu	Asp	Leu
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Lys	Ser	Leu	Ile	Asp	Lys	Ala	His	Glu	Leu	Gly	Leu	Val	Val	Leu	Met
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Asp	Val	Val	His	Ser	His	Ala	Ser	Asn	Asn	Thr	Leu	Asp	Gly	Leu	Asn
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His	His	Trp	Met	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Gly	Asn	Trp	Glu
	370					375					380				
Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Ala	Arg	Trp	Trp	Leu	Glu	Glu	Tyr
385					390					395					400
Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Met	Tyr	Thr
				405					410					415	
His	His	Gly	Leu	Gln	Val	Ala	Phe	Thr	Gly	Asn	Tyr	Ser	Glu	Tyr	Phe
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Val	Ser	Gly	Met	Pro	Thr	Phe	Ala	Leu	Pro	Val	Gln	Asp	Gly	Gly	Val
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Gly	Phe	Asp	Tyr	Arg	Leu	His	Met	Ala	Val	Pro	Asp	Lys	Trp	Ile	Glu
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Leu	Leu	Lys	Gln	Ser	Asp	Glu	Ser	Trp	Lys	Met	Gly	Asp	Ile	Val	His
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Thr	Leu	Thr	Asn	Arg	Arg	Trp	Ser	Glu	Lys	Cys	Val	Thr	Tyr	Ala	Glu
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Ser	His	Asp	Gln	Ala	Leu	Val	Gly	Asp	Lys	Thr	Ile	Ala	Phe	Trp	Leu
	530					535					540				
Met	Asp	Lys	Asp	Met	Tyr	Asp	Phe	Met	Ala	Leu	Asp	Arg	Pro	Ala	Thr
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Pro	Ser	Ile	Asp	Arg	Gly	Ile	Ala	Leu	His	Lys	Met	Ile	Arg	Leu	Ile
				565					570					575	
Thr	Met	Gly	Leu	Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	Met	Gly	Asn	Glu
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Met	Leu	Glu	Phe	Asp	Arg	Ala	Met	Gln	Ser	Leu	Glu	Glu	Lys	Tyr	Gly
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Phe	Met	Thr	Ser	Asp	His	Gln	Tyr	Ile	Ser	Arg	Lys	His	Glu	Glu	Asp
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Lys	Met	Ile	Ile	Phe	Glu	Lys	Gly	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe
		675					680					685			
His	Trp	Ser	Asn	Ser	Tyr	Phe	Asp	Tyr	Arg	Val	Gly	Cys	Leu	Lys	Pro
	690					695					700				
Gly	Lys	Tyr	Lys	Val	Val	Leu	Asp	Ser	Asp	Ala	Gly	Leu	Phe	Gly	Gly
705					710					715					720
Phe	Gly	Arg	Ile	His	His	Thr	Ala	Glu	His	Phe	Thr	Ala	Asp	Cys	Ser
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Gly Leu Arg Ala Gly Ala Val Arg Phe Pro Val Pro Ala Gly Ala Arg		
	35	40 45
Ser Trp Arg Ala Ala Ala Glu Leu Pro Thr Ser Arg Ser Leu Leu Ser		
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Gly Arg Arg Phe Pro Gly Ala Val Arg Val Gly Gly Ser Gly Gly Arg		
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Val Ala Val Arg Ala Ala Gly Ala Ser Gly Glu Val Met Ile Pro Glu		
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Gly Glu Ser Asp Gly Met Pro Val Ser Ala Gly Ser Asp Asp Leu Gln		
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Leu Pro Ala Leu Asp Asp Glu Leu Ser Thr Glu Val Gly Ala Glu Val		
	115	120 125
Glu Ile Glu Ser Ser Gly Ala Ser Asp Val Glu Gly Val Lys Arg Val		
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Val Glu Glu Leu Ala Ala Glu Gln Lys Pro Arg Val Val Pro Pro Thr		
145	150	155 160
Gly Asp Gly Gln Lys Ile Phe Gln Met Asp Ser Met Leu Asn Gly Tyr		
	165	170 175
Lys Tyr His Leu Glu Tyr Arg Tyr Ser Leu Tyr Arg Arg Leu Arg Ser		
	180	185 190
Asp Ile Asp Gln Tyr Glu Gly Gly Leu Glu Thr Phe Ser Arg Gly Tyr		
	195	200 205
Glu Lys Phe Gly Phe Asn His Ser Ala Glu Gly Val Thr Tyr Arg Glu		
	210	215 220
Trp Ala Pro Gly Ala His Ser Ala Ala Leu Val Gly Asp Phe Asn Asn		
225	230	235 240

Trp	Asn	Pro	Asn	Ala	Asp	Arg	Met	Ser	Lys	Asn	Glu	Phe	Gly	Val	Trp	
				245					250					255		
Glu	Ile	Phe	Leu	Pro	Asn	Asn	Ala	Asp	Gly	Ser	Ser	Pro	Ile	Pro	His	
			260					265					270			
Gly	Ser	Arg	Val	Lys	Val	Arg	Met	Glu	Thr	Pro	Ser	Gly	Ile	Lys	Asp	
		275					280					285				
Ser	Ile	Pro	Ala	Trp	Ile	Lys	Tyr	Ser	Val	Gln	Ala	Ala	Gly	Glu	Ile	
	290					295					300					
Pro	Tyr	Asn	Gly	Ile	Tyr	Tyr	Asp	Pro	Pro	Glu	Glu	Glu	Lys	Tyr	Ile	
305					310					315					320	
Phe	Lys	His	Pro	Gln	Pro	Lys	Arg	Pro	Lys	Ser	Leu	Arg	Ile	Tyr	Glu	
				325					330					335		
Thr	His	Val	Gly	Met	Ser	Ser	Thr	Glu	Pro	Lys	Ile	Asn	Thr	Tyr	Ala	
			340					345					350			
Asn	Phe	Arg	Asp	Glu	Val	Leu	Pro	Arg	Ile	Lys	Lys	Leu	Gly	Tyr	Asn	
		355					360					365				
Ala	Val	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	Ala	Tyr	Tyr	Gly	Ser	Phe	
	370					375					380					
Gly	Tyr	His	Val	Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Thr	
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Pro	Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp	Lys	Ala	His	Glu	Leu	Gly	Leu	
				405					410					415		
Val	Val	Leu	Met	Asp	Val	Val	His	Ser	His	Ala	Ser	Asn	Asn	Thr	Leu	
			420					425					430			
Asp	Gly	Leu	Asn	Gly	Phe	Asp	Gly	Thr	Asp	Thr	His	Tyr	Phe	His	Ser	
		435					440					445				
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	450					455					460					
Gly	Asn	Trp	Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Ala	Arg	Trp	Trp	
465					470					475					480	
Leu	Glu	Glu	Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	
				485					490					495		
Met	Met	Tyr	Thr	His	His	Gly	Leu	Gln	Val	Ala	Phe	Thr	Gly	Asn	Tyr	
			500					505					510			
Ser	Glu	Tyr	Phe	Gly	Phe	Ala	Thr	Asp	Ala	Asp	Ala	Val	Val	Tyr	Leu	
		515					520					525				
Met	Leu	Val	Asn	Asp	Leu	Ile	His	Gly	Leu	Tyr	Pro	Glu	Ala	Ile	Thr	
	530					535					540					

Ile	Gly	Glu	Asp	Val	Ser	Gly	Met	Pro	Thr	Phe	Ala	Leu	Pro	Val	Gln	545	550	555	560
Asp	Gly	Gly	Val	Gly	Phe	Asp	Tyr	Arg	Leu	His	Met	Ala	Val	Pro	Asp	565	570	575	
Lys	Trp	Ile	Glu	Leu	Leu	Lys	Gln	Ser	Asp	Glu	Ser	Trp	Lys	Met	Gly	580	585	590	
Asp	Ile	Val	His	Thr	Leu	Thr	Asn	Arg	Arg	Trp	Ser	Glu	Lys	Cys	Val	595	600	605	
Thr	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ala	Leu	Val	Gly	Asp	Lys	Thr	Ile	610	615	620	
Ala	Phe	Trp	Leu	Met	Asp	Lys	Asp	Met	Tyr	Asp	Phe	Met	Ala	Leu	Asp	625	630	635	640
Arg	Pro	Ala	Thr	Pro	Ser	Ile	Asp	Arg	Gly	Ile	Ala	Leu	His	Lys	Met	645	650	655	
Ile	Arg	Leu	Ile	Thr	Met	Gly	Leu	Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	660	665	670	
Met	Gly	Asn	Glu	Phe	Gly	His	Pro	Glu	Trp	Ile	Asp	Phe	Pro	Arg	Ala	675	680	685	
Pro	Gln	Val	Leu	Pro	Asn	Gly	Lys	Phe	Ile	Pro	Gly	Asn	Asn	Asn	Ser	690	695	700	
Tyr	Asp	Lys	Cys	Arg	Arg	Arg	Phe	Asp	Leu	Gly	Asp	Ala	Asp	Tyr	Leu	705	710	715	720
Arg	Tyr	Arg	Gly	Met	Leu	Glu	Phe	Asp	Arg	Ala	Met	Gln	Ser	Leu	Glu	725	730	735	
Glu	Lys	Tyr	Gly	Phe	Met	Thr	Ser	Asp	His	Gln	Tyr	Ile	Ser	Arg	Lys	740	745	750	
His	Glu	Glu	Asp	Lys	Met	Ile	Ile	Phe	Glu	Lys	Gly	Asp	Leu	Val	Phe	755	760	765	
Val	Phe	Asn	Phe	His	Trp	Ser	Asn	Ser	Tyr	Phe	Asp	Tyr	Arg	Val	Gly	770	775	780	
Cys	Leu	Lys	Pro	Gly	Lys	Tyr	Lys	Val	Val	Leu	Asp	Ser	Asp	Ala	Gly	785	790	795	800
Leu	Phe	Gly	Gly	Phe	Gly	Arg	Ile	His	His	Thr	Ala	Glu	His	Phe	Thr	805	810	815	
Ala	Asp	Cys	Ser	His	Asp	Asn	Arg	Pro	Tyr	Ser	Phe	Ser	Val	Tyr	Ser	820	825	830	
Pro	Ser	Arg	Thr	Cys	Val	Val	Tyr	Ala	Pro	Ala	Glu					835	840		

Val	Phe	Lys	His	Pro	Gln	Pro	Lys	Arg	Pro	Gln	Ser	Ile	Arg	Ile	Tyr	260	265	270	
Glu	Ser	His	Ile	Gly	Met	Ser	Ser	Pro	Glu	Pro	Lys	Ile	Asn	Thr	Tyr	275	280	285	
Ala	Asn	Phe	Arg	Asp	Asp	Val	Leu	Pro	Arg	Ile	Lys	Lys	Leu	Gly	Tyr	290	295	300	
Asn	Ala	Val	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	Ser	Tyr	Tyr	Ala	Ser	305	310	315	320
Phe	Gly	Tyr	His	Val	Thr	Asn	Phe	Phe	Ala	Pro	Ser	Ser	Arg	Phe	Gly	325	330	335	
Thr	Pro	Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp	Arg	Ala	His	Glu	Leu	Gly	340	345	350	
Leu	Leu	Val	Leu	Met	Asp	Ile	Val	His	Ser	His	Ser	Ser	Asn	Asn	Thr	355	360	365	
Leu	Asp	Gly	Leu	Asn	Met	Phe	Asp	Gly	Thr	Asp	Gly	His	Tyr	Phe	His	370	375	380	
Pro	Gly	Ser	Arg	Gly	Tyr	His	Trp	Met	Trp	Asp	Ser	Arg	Leu	Phe	Asn	385	390	395	400
Tyr	Gly	Ser	Trp	Glu	Val	Leu	Arg	Tyr	Leu	Leu	Ser	Asn	Ala	Arg	Trp	405	410	415	
Trp	Leu	Asp	Glu	Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	420	425	430	
Ser	Met	Met	Tyr	Thr	His	His	Gly	Leu	Gln	Val	Ser	Phe	Thr	Gly	Asn	435	440	445	
Tyr	Ser	Glu	Tyr	Phe	Gly	Leu	Ala	Thr	Asp	Val	Glu	Ala	Val	Val	Tyr	450	455	460	
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Ser	Ile	Gly	Glu	Asp	Val	Ser	Gly	Met	Pro	Thr	Phe	Cys	Leu	Pro	Thr	485	490	495	
Gln	Asp	Gly	Gly	Ile	Gly	Phe	Asn	Tyr	Arg	Leu	His	Met	Ala	Val	Ala	500	505	510	
Asp	Lys	Trp	Ile	Glu	Leu	Leu	Lys	Lys	Gln	Asp	Glu	Asp	Trp	Arg	Met	515	520	525	
Gly	Asp	Ile	Val	His	Thr	Leu	Thr	Asn	Arg	Arg	Trp	Leu	Glu	Lys	Cys	530	535	540	
Val	Val	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ala	Leu	Val	Gly	Asp	Lys	Thr	545	550	555	560

Leu Ala Phe Trp Leu Met Asp Lys Asp Met Tyr Asp Phe Met Ala Leu
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 Asp Arg Pro Ser Thr Pro Leu Ile Asp Arg Gly Ile Ala Leu His Lys
 580 585 590
 Met Ile Arg Leu Ile Thr Met Gly Leu Gly Gly Glu Gly Tyr Leu Asn
 595 600 605
 Phe Met Gly Asn Glu Phe Gly His Pro Glu Trp Ile Asp Phe Pro Arg
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 Ser Tyr Asp Lys Cys Arg Arg Arg Phe Asp Leu Gly Asp Ala Asp Tyr
 645 650 655
 Leu Arg Tyr His Gly Met Gln Glu Phe Asp Arg Ala Met Gln His Leu
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 Glu Glu Arg Tyr Gly Phe Met Thr Ser Glu His Gln Tyr Ile Ser Arg
 675 680 685
 Lys Asn Glu Gly Asp Arg Val Ile Ile Phe Glu Arg Asp Asn Leu Val
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 Phe Val Phe Asn Phe His Trp Thr Asn Ser Tyr Ser Asp Tyr Lys Val
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 Gly Cys Leu Lys Pro Gly Lys Tyr Lys Ile Val Leu Asp Ser Asp Asp
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 Thr Leu Phe Gly Gly Phe Asn Arg Leu Asn His Thr Ala Glu Tyr Phe
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 Thr Ser Glu Gly Trp Tyr Asp Asp Arg Pro Arg Ser Phe Leu Val Tyr
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 Ala Pro Ser Arg Thr Ala Val Val Tyr Ala Leu Ala Asp Gly Val Glu
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Arg Met Lys Arg Tyr Val Asp Gln Lys Met Leu Ile Glu Lys Tyr Glu
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Gly Pro Leu Glu Glu Phe Ala Gln Gly Tyr Leu Lys Phe Gly Phe Asn
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Arg Glu Asp Gly Cys Ile Val Tyr Arg Glu Trp Ala Pro Ala Ala Gln
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Met Met Glu Lys Asp Gln Phe Gly Val Trp Ser Ile Arg Ile Pro Asp
 100 105 110

Val Asp Ser Lys Pro Val Ile Pro His Asn Ser Arg Val Lys Phe Arg
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Phe Lys His Gly Asn Gly Val Trp Val Asp Arg Ile Pro Ala Trp Ile
 130 135 140

Lys Tyr Ala Thr Ala Asp Ala Thr Lys Phe Ala Ala Pro Tyr Asp Gly
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Val Tyr Trp Asp Pro Pro Pro Ser Glu Arg Tyr His Phe Lys Tyr Pro
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Arg Pro Pro Lys Pro Arg Ala Pro Arg Ile Tyr Glu Ala His Val Gly
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Met Ser Ser Ser Glu Pro Arg Val Asn Ser Tyr Arg Glu Phe Ala Asp
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Asp Val Leu Pro Arg Ile Lys Ala Asn Asn Tyr Asn Thr Val Gln Leu
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Met Ala Ile Met Glu His Ser Tyr Tyr Gly Ser Phe Gly Tyr His Val
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Thr Asn Phe Phe Ala Val Ser Ser Arg Tyr Gly Asn Pro Glu Asp Leu
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Lys Tyr Leu Ile Asp Lys Ala His Ser Leu Gly Leu Gln Val Leu Val

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Ala	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys	Thr	Ile		
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Ala	Phe	Leu	Leu	Met	Asp	Lys	Glu	Met	Tyr	Ser	Gly	Met	Ser	Cys	Leu		
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Thr	Asp	Ala	Ser	Pro	Val	Val	Asp	Arg	Gly	Ile	Ala	Leu	His	Lys	Met		
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Ile	His	Phe	Phe	Thr	Met	Ala	Leu	Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe		
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Ile	Val	Ser	Ser	Met	Asp	Asp	Asp	Asn	Lys	Val	Val	Val	Phe	Glu	Arg					
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Gly	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe	His	Pro	Lys	Asn	Thr	Tyr	Glu					
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Gly	Tyr	Lys	Val	Gly	Cys	Asp	Leu	Pro	Gly	Lys	Tyr	Arg	Val	Ala	Leu					
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Asp	Ser	Asp	Ala	Trp	Glu	Phe	Gly	Gly	His	Gly	Arg	Thr	Gly	His	Asp					
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His	Val	Trp	Leu	Ile	Thr	Glu	Leu	Met	Asn	Ala	Cys	Gln	Lys	Leu	Lys					
	690					695					700									
Ile	Thr	Arg	Gln	Thr	Phe	Val	Val	Ser	Tyr	Tyr	Gln	Gln	Pro	Ile	Ser					
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Arg	Arg	Val	Thr	Arg	Asn	Leu	Lys	Ile	Arg	Tyr	Leu	Gln	Ile	Ser	Val					
				725					730					735						
Thr	Leu	Thr	Asn	Ala	Cys	Gln	Lys	Leu	Lys	Phe	Thr	Arg	Gln	Thr	Phe					
			740					745					750							
Leu	Val	Ser	Tyr	Tyr	Gln	Gln	Pro	Ile	Leu	Arg	Arg	Val	Thr	Arg	Lys					
		755					760					765								
Leu	Lys	Asp	Ser	Leu	Ser	Thr	Asn	Ile	Ser	Thr										
	770					775														

<210> 21
 <211> 762
 <212> PRT
 <213> Triticum aestivum

<400> 21

Thr	Met	Ala	Thr	Ala	Glu	Asp	Gly	Val	Gly	Asp	Leu	Pro	Ile	Tyr	Asp		
1				5					10					15			
Leu	Asp	Pro	Lys	Phe	Ala	Gly	Phe	Lys	Glu	His	Phe	Ser	Tyr	Arg	Met		
			20					25					30				
Lys	Lys	Tyr	Leu	Asp	Gln	Lys	His	Ser	Ile	Glu	Lys	His	Glu	Gly	Gly		
		35					40					45					

Leu	Glu	Glu	Phe	Ser	Lys	Gly	Tyr	Leu	Lys	Phe	Gly	Ile	Asn	Thr	Glu
	50					55					60				
Asn	Asp	Ala	Thr	Val	Tyr	Arg	Glu	Trp	Ala	Pro	Ala	Ala	Met	Asp	Ala
65					70				75						80
Gln	Leu	Ile	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Gly	Ser	Gly	His	Arg	Met
				85					90					95	
Thr	Lys	Asp	Asn	Tyr	Gly	Val	Trp	Ser	Ile	Arg	Ile	Ser	His	Val	Asn
			100					105					110		
Gly	Lys	Pro	Ala	Ile	Pro	His	Asn	Ser	Lys	Val	Lys	Phe	Arg	Phe	His
		115					120					125			
Arg	Gly	Asp	Gly	Leu	Trp	Val	Asp	Arg	Val	Pro	Ala	Trp	Ile	Arg	Tyr
	130					135					140				
Ala	Thr	Phe	Asp	Ala	Ser	Lys	Phe	Gly	Ala	Pro	Tyr	Asp	Gly	Val	His
145					150					155					160
Trp	Asp	Pro	Pro	Ser	Gly	Glu	Arg	Tyr	Val	Phe	Lys	His	Pro	Arg	Pro
				165					170					175	
Arg	Lys	Pro	Asp	Ala	Pro	Arg	Ile	Tyr	Glu	Ala	His	Val	Gly	Met	Ser
			180					185					190		
Gly	Glu	Lys	Pro	Glu	Val	Ser	Thr	Tyr	Arg	Glu	Phe	Ala	Asp	Asn	Val
		195					200					205			
Leu	Pro	Arg	Ile	Lys	Ala	Asn	Asn	Tyr	Asn	Thr	Val	Gln	Leu	Met	Ala
	210					215					220				
Ile	Met	Glu	His	Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn
225					230					235					240
Phe	Phe	Ala	Val	Ser	Ser	Arg	Ser	Gly	Thr	Pro	Glu	Asp	Leu	Lys	Tyr
				245					250					255	
Leu	Val	Asp	Lys	Ala	His	Ser	Leu	Gly	Leu	Arg	Val	Leu	Met	Asp	Val
			260					265					270		
Val	His	Ser	His	Ala	Ser	Ser	Asn	Lys	Thr	Asp	Gly	Leu	Asn	Gly	Tyr
		275					280					285			
Asp	Val	Gly	Gln	Asn	Thr	Gln	Glu	Ser	Tyr	Phe	His	Thr	Gly	Glu	Arg
	290					295					300				
Gly	Tyr	His	Lys	Leu	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Ala	Asn	Trp
305					310					315					320
Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Tyr	Trp	Met	Asp	Glu
				325					330					335	
Phe	Met	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Leu	Tyr
			340					345					350		

Asn	His	His	Gly	Ile	Asn	Met	Ser	Phe	Ala	Gly	Ser	Tyr	Lys	Glu	Tyr			
		355					360					365						
Phe	Gly	Leu	Asp	Thr	Asp	Val	Asp	Ala	Val	Val	Tyr	Leu	Met	Leu	Ala			
	370					375					380							
Asn	His	Leu	Met	His	Lys	Leu	Leu	Pro	Glu	Ala	Thr	Val	Val	Ala	Glu			
385					390					395					400			
Asp	Val	Ser	Gly	Met	Pro	Val	Leu	Cys	Arg	Ser	Val	Asp	Glu	Gly	Gly			
				405					410					415				
Val	Gly	Phe	Asp	Tyr	Arg	Leu	Ala	Met	Ala	Ile	Pro	Asp	Arg	Trp	Ile			
			420					425					430					
Asp	Tyr	Leu	Lys	Asn	Lys	Asp	Asp	Leu	Glu	Trp	Ser	Met	Ser	Gly	Ile			
		435					440					445						
Ala	His	Thr	Leu	Thr	Asn	Arg	Arg	Tyr	Thr	Glu	Lys	Cys	Ile	Ala	Tyr			
		450				455					460							
Ala	Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys	Thr	Met	Ala	Phe			
465					470					475					480			
Leu	Leu	Met	Asp	Lys	Glu	Met	Tyr	Thr	Gly	Met	Ser	Asp	Leu	Gln	Pro			
				485					490					495				
Ala	Ser	Pro	Thr	Ile	Asp	Arg	Gly	Ile	Ala	Leu	Gln	Lys	Met	Ile	His			
			500					505					510					
Phe	Ile	Thr	Met	Ala	Leu	Gly	Gly	Asp	Gly	Tyr	Leu	Asn	Phe	Met	Gly			
		515					520					525						
Asn	Glu	Phe	Gly	His	Pro	Glu	Trp	Ile	Asp	Phe	Pro	Arg	Glu	Gly	Asn			
	530					535					540							
Asn	Trp	Ser	Tyr	Asp	Lys	Cys	Arg	Arg	Gln	Trp	Ser	Leu	Ala	Asp	Ile			
545					550					555					560			
Asp	His	Leu	Arg	Tyr	Lys	Tyr	Met	Asn	Ala	Phe	Asp	Gln	Ala	Met	Asn			
				565					570					575				
Ala	Leu	Asp	Asp	Lys	Phe	Ser	Phe	Leu	Ser	Ser	Ser	Lys	Gln	Ile	Val			
			580					585					590					
Ser	Asp	Met	Asn	Glu	Glu	Lys	Lys	Ile	Ile	Val	Phe	Glu	Arg	Gly	Asp			
		595					600					605						
Leu	Val	Phe	Val	Phe	Asn	Phe	His	Pro	Ser	Lys	Thr	Tyr	Asp	Gly	Tyr			
	610					615					620							
Lys	Val	Gly	Cys	Asp	Leu	Pro	Gly	Lys	Tyr	Lys	Val	Ala	Leu	Asp	Ser			
625					630					635					640			
Asp	Ala	Leu	Met	Phe	Gly	Gly	His	Gly	Arg	Val	Ala	His	Asp	Asn	Asp			
				645					650					655				

His Phe Thr Ser Pro Glu Gly Val Pro Gly Val Pro Glu Thr Asn Phe
 660 665 670
 Asn Asn Arg Pro Asn Ser Phe Lys Ile Leu Ser Pro Ser Arg Thr Cys
 675 680 685
 Val Ala Tyr Tyr Arg Val Glu Glu Lys Ala Glu Lys Pro Lys Asp Glu
 690 695 700
 Gly Ala Ala Ser Trp Gly Lys Thr Ala Leu Gly Tyr Ile Asp Val Glu
 705 710 715 720
 Ala Thr Gly Val Lys Asp Ala Ala Asp Gly Glu Ala Thr Ser Gly Ser
 725 730 735
 Glu Lys Ala Ser Thr Gly Gly Asp Ser Ser Lys Lys Gly Ile Asn Phe
 740 745 750
 Val Phe Leu Ser Pro Asp Lys Asp Asn Lys
 755 760

<210> 22
 <211> 703
 <212> PRT
 <213> Triticum aestivum

<400> 22

Ser Pro Pro Thr Leu Thr Ser Pro Pro Pro Ser Ala Val Pro Ser Thr
 1 5 10 15
 Thr Met Leu Cys Leu Ser Ser Ser Leu Leu Pro Arg Pro Ser Ala Ala
 20 25 30
 Ala Asp Arg Pro Leu Pro Gly Ile Ile Ala Gly Gly Gly Gly Gly Lys
 35 40 45
 Arg Leu Ser Val Val Pro Ser Val Pro Phe Leu Leu Arg Trp Leu Trp
 50 55 60
 Pro Arg Lys Ala Lys Ser Lys Ser Phe Val Ser Val Thr Ala Arg Gly
 65 70 75 80
 Asn Lys Ile Ala Ala Thr Thr Gly Tyr Gly Ser Asp His Leu Pro Ile
 85 90 95
 Tyr Asp Leu Asp Leu Lys Leu Ala Glu Phe Lys Asp His Phe Asp Tyr
 100 105 110
 Thr Arg Asn Arg Tyr Ile Glu Gln Lys His Leu Ile Glu Lys His Glu
 115 120 125
 Gly Ser Leu Glu Glu Phe Ser Lys Gly Tyr Leu Lys Phe Gly Ile Asn
 130 135 140

Thr 145	Glu	His	Gly	Ala	Ser 150	Val	Tyr	Arg	Glu	Trp 155	Ala	Pro	Ala	Ala	Glu 160
Glu	Ala	Gln	Leu	Val 165	Gly	Asp	Phe	Asn	Asn 170	Trp	Asn	Gly	Ser	Gly 175	His
Lys	Met	Ala	Lys 180	Asp	Asn	Phe	Gly	Val 185	Trp	Ser	Ile	Arg	Ile 190	Ser	His
Val	Asn	Gly 195	Lys	Pro	Ala	Ile	Pro 200	His	Asn	Ser	Lys	Val 205	Lys	Phe	Arg
Phe 210	Arg	His	His	Gly	Val	Trp 215	Val	Glu	Gln	Ile	Pro 220	Ala	Trp	Ile	Arg
Tyr 225	Ala	Thr	Val	Thr	Ala 230	Ser	Glu	Ser	Gly	Ala 235	Pro	Tyr	Asp	Gly	Leu 240
His	Trp	Asp	Pro	Pro 245	Ser	Ser	Glu	Arg	Tyr 250	Val	Phe	Asn	His	Pro 255	Arg
Pro	Pro	Lys	Pro 260	Asp	Val	Pro	Arg	Ile 265	Tyr	Glu	Ala	His	Val 270	Gly	Val
Ser	Gly	Gly 275	Lys	Leu	Glu	Ala	Gly 280	Thr	Tyr	Arg	Glu	Phe 285	Pro	Asp	Asn
Val 290	Leu	Pro	Cys	Leu	Arg	Ala 295	Thr	Asn	Tyr	Asn	Thr 300	Val	Gln	Leu	Met
Gly 305	Ile	Met	Glu	His	Ser 310	Asp	Ser	Ala	Ser	Phe 315	Gly	Tyr	His	Val 320	Thr
Asn	Phe	Phe	Ala	Val 325	Ser	Ser	Arg	Ser	Gly 330	Thr	Pro	Glu	Asp	Leu 335	Lys
Tyr	Leu	Ile	Asp 340	Lys	Ala	His	Ser	Leu 345	Gly	Leu	Arg	Val	Leu 350	Met	Asp
Val	Val	His 355	Ser	His	Ala	Ser	Asn 360	Asn	Val	Ile	Asp	Gly 365	Leu	Asn	Gly
Tyr	Asp 370	Val	Gly	Gln	Ser	Ala 375	His	Glu	Ser	Tyr	Phe 380	Tyr	Thr	Gly	Asp
Lys 385	Gly	Tyr	Asn	Lys	Met 390	Trp	Asn	Gly	Arg	Met 395	Phe	Asn	Tyr	Ala	Asn 400
Trp	Glu	Val	Leu	Arg 405	Phe	Leu	Leu	Ser	Asn 410	Leu	Arg	Tyr	Trp	Met 415	Asp
Glu	Phe	Met	Phe 420	Asp	Gly	Phe	Arg	Phe 425	Val	Gly	Val	Thr 430	Ser	Met	Leu
Tyr	Asn 435	His	Asn	Gly	Ile	Asn	Met 440	Ser	Phe	Asn	Gly 445	Asn	Tyr	Lys	Asp

Tyr Ile Gly Leu Asp Thr Asn Val Asp Ala Phe Val Tyr Met Met Leu
 450 455 460

Ala Asn His Leu Met His Lys Leu Phe Pro Glu Ala Ile Val Val Ala
 465 470 475 480

Val Asp Val Ser Gly Met Pro Val Leu Cys Trp Pro Val Asp Glu Gly
 485 490 495

Gly Leu Gly Phe Asp Tyr Arg Gln Ala Met Thr Ile Pro Asp Arg Trp
 500 505 510

Ile Asp Tyr Leu Glu Asn Lys Gly Asp Gln Gln Trp Ser Met Ser Ser
 515 520 525

Val Ile Ser Gln Thr Leu Thr Asn Arg Arg Tyr Pro Glu Lys Phe Ile
 530 535 540

Ala Tyr Ala Glu Arg Gln Asn His Ser Ile Ile Gly Ser Lys Thr Met
 545 550 555 560

Ala Phe Leu Leu Met Glu Trp Glu Thr Tyr Ser Gly Met Ser Ala Met
 565 570 575

Asp Pro Asp Ser Pro Thr Ile Asp Arg Ala Ile Ala Leu Gln Lys Met
 580 585 590

Ile His Phe Ile Thr Met Ala Phe Gly Gly Asp Ser Tyr Leu Lys Phe
 595 600 605

Met Gly Asn Glu Tyr Met Asn Ala Phe Val Gln Ala Val Asp Thr Pro
 610 615 620

Ser Asp Lys Cys Ser Phe Leu Ser Ser Ser Asn Gln Thr Ala Ser His
 625 630 635 640

Met Asn Glu Glu Glu Lys Gly Ser Ala Leu Thr Lys Gly Tyr Thr His
 645 650 655

Leu Arg Ser Gly Cys Phe Asp Pro Ser Leu Pro Ser Thr Ser Ser Cys
 660 665 670

Ala Phe Leu Gly Pro Ser Asn Gln Ser Pro Phe Ser Lys Pro Phe Ile
 675 680 685

Gly Phe Pro Gly Cys Ile Phe Cys Cys Gly Leu Phe Lys Gly Glu
 690 695 700

<210> 23
 <211> 752
 <212> PRT
 <213> Zea mays

<400> 23

Thr Met Ala Thr Ala Lys Gly Asp Val Asp His Leu Pro Ile Tyr Asp

1	5	10	15
Leu Asp Pro Lys	Leu Glu Ile Phe	Lys Asp His Phe	Arg Tyr Arg Met
20		25	30
Lys Arg Phe Leu	Glu Gln Lys Gly	Ser Ile Glu Glu	Asn Glu Gly Ser
35		40	45
Leu Glu Ser Phe	Ser Lys Gly Tyr	Leu Lys Phe Gly	Ile Asn Thr Asn
50		55	60
Glu Asp Gly Thr	Val Tyr Arg Glu	Trp Ala Pro Ala	Ala Gln Glu Ala
65		70	75
80			
Glu Leu Ile Gly	Asp Phe Asn Asp	Trp Asn Gly Ala	Asn His Lys Met
85		90	95
Glu Lys Asp Lys	Phe Gly Val Trp	Ser Ile Lys Ile	Asp His Val Lys
100		105	110
Gly Lys Pro Ala	Ile Pro His Asn	Ser Lys Val Lys	Phe Arg Phe Leu
115		120	125
His Gly Gly Val	Trp Val Asp Arg	Ile Pro Ala Leu	Ile Arg Tyr Ala
130		135	140
Thr Val Asp Ala	Ser Lys Phe Gly	Ala Pro Tyr Asp	Gly Val His Trp
145		150	155
160			
Asp Pro Pro Ala	Ser Glu Arg Tyr	Thr Phe Lys His	Pro Arg Pro Ser
165		170	175
Lys Pro Ala Ala	Pro Arg Ile Tyr	Glu Ala His Val	Gly Met Ser Gly
180		185	190
Glu Lys Pro Ala	Val Ser Thr Tyr	Arg Glu Phe Ala	Asp Asn Val Leu
195		200	205
Pro Arg Ile Arg	Ala Asn Asn Tyr	Asn Thr Val Gln	Leu Met Ala Val
210		215	220
Met Glu His Ser	Tyr Tyr Ala Ser	Phe Gly Tyr His	Val Thr Asn Phe
225		230	235
240			
Phe Ala Val Ser	Ser Arg Ser Gly	Thr Pro Glu Asp	Leu Lys Tyr Leu
245		250	255
Val Asp Lys Ala	His Ser Leu Gly	Leu Arg Val Leu	Met Asp Val Val
260		265	270
His Ser His Ala	Ser Asn Asn Val	Thr Asp Gly Leu	Asn Gly Tyr Asp
275		280	285
Val Gly Gln Ser	Thr Gln Glu Ser	Tyr Phe His Ala	Gly Asp Arg Gly
290		295	300
Tyr His Lys Leu	Trp Asp Ser Arg	Leu Phe Asn Tyr	Ala Asn Trp Glu

305		310		315		320									
Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Tyr	Trp	Leu	Asp	Glu	Phe
			325						330					335	
Met	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Leu	Tyr	His
			340					345					350		
His	His	Gly	Ile	Asn	Val	Gly	Phe	Thr	Gly	Asn	Tyr	Gln	Glu	Tyr	Phe
		355					360					365			
Ser	Leu	Asp	Thr	Ala	Val	Asp	Ala	Val	Val	Tyr	Met	Met	Leu	Ala	Asn
		370				375					380				
His	Leu	Met	His	Lys	Leu	Leu	Pro	Glu	Ala	Thr	Val	Val	Ala	Glu	Asp
385					390					395					400
Val	Ser	Gly	Met	Pro	Val	Leu	Cys	Arg	Pro	Val	Asp	Glu	Gly	Gly	Val
				405					410					415	
Gly	Phe	Asp	Tyr	Arg	Leu	Ala	Met	Ala	Ile	Pro	Asp	Arg	Trp	Ile	Asp
			420					425					430		
Tyr	Leu	Lys	Asn	Lys	Asp	Asp	Ser	Glu	Trp	Ser	Met	Gly	Glu	Ile	Ala
		435					440					445			
His	Thr	Leu	Thr	Asn	Arg	Arg	Tyr	Thr	Glu	Lys	Cys	Ile	Ala	Tyr	Ala
		450				455					460				
Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys	Thr	Ile	Ala	Phe	Leu
465					470					475					480
Leu	Met	Asp	Lys	Glu	Met	Tyr	Thr	Gly	Met	Ser	Asp	Leu	Gln	Pro	Ala
				485					490					495	
Ser	Pro	Thr	Ile	Asp	Arg	Gly	Ile	Ala	Leu	Gln	Lys	Met	Ile	His	Phe
			500					505					510		
Ile	Thr	Met	Ala	Leu	Gly	Gly	Asp	Gly	Tyr	Leu	Asn	Phe	Met	Gly	Asn
		515					520					525			
Glu	Phe	Gly	His	Pro	Glu	Trp	Ile	Asp	Phe	Pro	Arg	Glu	Gly	Asn	Asn
		530				535					540				
Trp	Ser	Tyr	Asp	Lys	Cys	Arg	Arg	Gln	Trp	Ser	Leu	Val	Asp	Thr	Asp
545					550					555					560
His	Leu	Arg	Tyr	Lys	Tyr	Met	Asn	Ala	Phe	Asp	Gln	Ala	Met	Asn	Ala
				565					570					575	
Leu	Asp	Glu	Arg	Phe	Ser	Phe	Leu	Ser	Ser	Ser	Lys	Gln	Ile	Val	Ser
			580					585					590		
Asp	Met	Asn	Asp	Glu	Glu	Lys	Val	Ile	Val	Phe	Glu	Arg	Gly	Asp	Leu
		595					600					605			
Val	Phe	Val	Phe	Asn	Phe	His	Pro	Lys	Lys	Thr	Tyr	Glu	Gly	Tyr	Lys

610					615					620					
Val	Gly	Cys	Asp	Leu	Pro	Gly	Lys	Tyr	Arg	Val	Ala	Leu	Asp	Ser	Asp
625					630					635					640
Ala	Leu	Val	Phe	Gly	Gly	His	Gly	Arg	Val	Gly	His	Asp	Val	Asp	His
				645					650					655	
Phe	Thr	Ser	Pro	Glu	Gly	Val	Pro	Gly	Val	Pro	Glu	Thr	Asn	Phe	Asn
			660					665					670		
Asn	Arg	Pro	Asn	Ser	Phe	Lys	Val	Leu	Ser	Pro	Pro	Arg	Thr	Cys	Val
			675				680					685			
Ala	Tyr	Tyr	Arg	Val	Asp	Glu	Ala	Gly	Ala	Gly	Arg	Arg	Leu	His	Ala
	690					695					700				
Lys	Ala	Glu	Thr	Gly	Lys	Thr	Ser	Pro	Ala	Glu	Ser	Ile	Asp	Val	Lys
705					710					715					720
Ala	Ser	Arg	Ala	Ser	Ser	Lys	Glu	Asp	Lys	Glu	Ala	Thr	Ala	Gly	Gly
				725					730					735	
Lys	Lys	Gly	Trp	Lys	Phe	Ala	Arg	Gln	Pro	Ser	Asp	Gln	Asp	Thr	Lys
			740					745					750		

<210> 24
 <211> 756
 <212> PRT
 <213> Oryza sativa

<400> 24

Thr	Met	Val	Thr	Val	Val	Glu	Glu	Val	Asp	His	Leu	Pro	Ile	Tyr	Asp
1				5					10					15	
Leu	Asp	Pro	Lys	Leu	Glu	Glu	Phe	Lys	Asp	His	Phe	Asn	Tyr	Arg	Ile
			20					25					30		
Lys	Arg	Tyr	Leu	Asp	Gln	Lys	Cys	Leu	Ile	Glu	Lys	His	Glu	Gly	Gly
		35					40					45			
Leu	Glu	Glu	Phe	Ser	Lys	Gly	Tyr	Leu	Lys	Phe	Gly	Ile	Asn	Thr	Val
	50					55					60				
Asp	Gly	Ala	Thr	Ile	Tyr	Arg	Glu	Trp	Ala	Pro	Ala	Ala	Gln	Glu	Ala
65					70					75					80
Gln	Leu	Ile	Gly	Glu	Phe	Asn	Asn	Trp	Asn	Gly	Ala	Lys	His	Lys	Met
			85						90					95	
Glu	Lys	Asp	Lys	Phe	Gly	Ile	Trp	Ser	Ile	Lys	Ile	Ser	His	Val	Asn
			100					105					110		
Gly	Lys	Pro	Ala	Ile	Pro	His	Asn	Ser	Lys	Val	Lys	Phe	Arg	Phe	Arg
		115					120					125			

His	Gly	Gly	Gly	Ala	Trp	Val	Asp	Arg	Ile	Pro	Ala	Trp	Ile	Arg	Tyr	130	135	140	
Ala	Thr	Phe	Asp	Ala	Ser	Lys	Phe	Gly	Ala	Pro	Tyr	Asp	Gly	Val	His	145	150	155	160
Trp	Asp	Pro	Pro	Ala	Cys	Glu	Arg	Tyr	Val	Phe	Lys	His	Pro	Arg	Pro	165	170	175	
Pro	Lys	Pro	Asp	Ala	Pro	Arg	Ile	Tyr	Glu	Ala	His	Val	Gly	Met	Ser	180	185	190	
Gly	Glu	Glu	Pro	Glu	Val	Ser	Thr	Tyr	Arg	Glu	Phe	Ala	Asp	Asn	Val	195	200	205	
Leu	Pro	Arg	Ile	Arg	Ala	Asn	Asn	Tyr	Asn	Thr	Val	Gln	Leu	Met	Ala	210	215	220	
Ile	Met	Glu	His	Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn	225	230	235	240
Phe	Phe	Ala	Val	Ser	Ser	Arg	Ser	Gly	Thr	Pro	Glu	Asp	Leu	Lys	Tyr	245	250	255	
Leu	Val	Asp	Lys	Ala	His	Ser	Leu	Gly	Leu	Arg	Val	Leu	Met	Asp	Val	260	265	270	
Val	His	Ser	His	Ala	Ser	Asn	Asn	Val	Thr	Asp	Gly	Leu	Asn	Gly	Tyr	275	280	285	
Asp	Val	Gly	Gln	Asn	Thr	His	Glu	Ser	Tyr	Phe	His	Thr	Gly	Asp	Arg	290	295	300	
Gly	Tyr	His	Lys	Leu	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Ala	Asn	Trp	305	310	315	320
Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Tyr	Trp	Met	Asp	Glu	325	330	335	
Phe	Met	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Leu	Tyr	340	345	350	
His	His	His	Gly	Ile	Asn	Lys	Gly	Phe	Thr	Gly	Asn	Tyr	Lys	Glu	Tyr	355	360	365	
Phe	Ser	Leu	Asp	Thr	Asp	Val	Asp	Ala	Ile	Val	Tyr	Met	Met	Leu	Ala	370	375	380	
Asn	His	Leu	Met	His	Lys	Leu	Leu	Pro	Glu	Ala	Thr	Ile	Val	Ala	Glu	385	390	395	400
Asp	Val	Ser	Gly	Met	Pro	Val	Leu	Cys	Arg	Pro	Val	Asp	Glu	Gly	Gly	405	410	415	
Val	Gly	Phe	Asp	Phe	Arg	Leu	Ala	Met	Ala	Ile	Pro	Asp	Arg	Trp	Ile	420	425	430	

Asp	Tyr	Leu	Lys	Asn	Lys	Glu	Asp	Arg	Lys	Trp	Ser	Met	Ser	Glu	Ile
		435					440					445			
Val	Gln	Thr	Leu	Thr	Asn	Arg	Arg	Tyr	Thr	Glu	Lys	Cys	Ile	Ala	Tyr
		450				455					460				
Ala	Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys	Thr	Ile	Ala	Phe
465					470					475					480
Leu	Leu	Met	Asp	Lys	Glu	Met	Tyr	Thr	Gly	Met	Ser	Asp	Leu	Gln	Pro
				485					490					495	
Ala	Ser	Pro	Thr	Ile	Asn	Arg	Gly	Ile	Ala	Leu	Gln	Lys	Met	Ile	His
			500					505					510		
Phe	Ile	Thr	Met	Ala	Leu	Gly	Gly	Asp	Gly	Tyr	Leu	Asn	Phe	Met	Gly
		515					520					525			
Asn	Glu	Phe	Gly	His	Pro	Glu	Trp	Ile	Asp	Phe	Pro	Arg	Glu	Gly	Asn
	530					535					540				
Asn	Trp	Ser	Tyr	Asp	Lys	Cys	Arg	Arg	Gln	Trp	Ser	Leu	Val	Asp	Thr
545					550					555					560
Asp	His	Leu	Arg	Tyr	Lys	Tyr	Met	Asn	Ala	Phe	Asp	Gln	Ala	Met	Asn
				565					570					575	
Ala	Leu	Glu	Glu	Glu	Phe	Ser	Phe	Leu	Ser	Ser	Ser	Lys	Gln	Ile	Val
			580					585					590		
Ser	Asp	Met	Asn	Glu	Lys	Asp	Lys	Val	Ile	Val	Phe	Glu	Arg	Gly	Asp
		595					600					605			
Leu	Val	Phe	Val	Phe	Asn	Phe	His	Pro	Asn	Lys	Thr	Tyr	Lys	Gly	Tyr
	610					615					620				
Lys	Val	Gly	Cys	Asp	Leu	Pro	Gly	Lys	Tyr	Arg	Val	Ala	Leu	Asp	Ser
625					630					635					640
Asp	Ala	Leu	Val	Phe	Gly	Gly	His	Gly	Arg	Val	Gly	His	Asp	Val	Asp
				645					650					655	
His	Phe	Thr	Ser	Pro	Glu	Gly	Met	Pro	Gly	Val	Pro	Glu	Thr	Asn	Phe
			660					665						670	
Asn	Asn	Arg	Pro	Asn	Ser	Phe	Lys	Val	Leu	Ser	Pro	Pro	Arg	Thr	Cys
		675					680					685			
Val	Ala	Tyr	Tyr	Arg	Val	Asp	Glu	Asp	Arg	Glu	Glu	Leu	Arg	Arg	Gly
	690					695					700				
Gly	Ala	Val	Ala	Ser	Gly	Lys	Ile	Val	Thr	Glu	Tyr	Ile	Asp	Val	Glu
705					710					715					720
Ala	Thr	Ser	Gly	Glu	Thr	Ile	Ser	Gly	Gly	Trp	Lys	Gly	Ser	Glu	Lys
				725					730					735	

Asp Asp Cys Gly Lys Lys Gly Met Lys Phe Val Phe Arg Ser Ser Asp
 740 745 750

Glu Asp Cys Lys
 755

<210> 25
 <211> 762
 <212> PRT
 <213> Pisum sativum

<400> 25

Thr Met Pro Ser Val Glu Glu Asp Phe Glu Asn Ile Gly Ile Leu Asn
 1 5 10 15

Val Asp Ser Ser Leu Glu Pro Phe Lys Asp His Phe Lys Tyr Arg Leu
 20 25 30

Lys Arg Tyr Leu His Gln Lys Lys Leu Ile Glu Glu Tyr Glu Gly Gly
 35 40 45

Leu Gln Glu Phe Ala Lys Gly Tyr Leu Lys Phe Gly Phe Asn Arg Glu
 50 55 60

Glu Asp Gly Ile Ser Tyr Arg Glu Trp Ala Pro Ala Ala Gln Glu Ala
 65 70 75 80

Gln Ile Ile Gly Asp Phe Asn Gly Trp Asn Gly Ser Asn Leu His Met
 85 90 95

Glu Lys Asp Gln Phe Gly Val Trp Ser Ile Gln Ile Pro Asp Ala Asp
 100 105 110

Gly Asn Pro Ala Ile Pro His Asn Ser Arg Val Lys Phe Arg Phe Lys
 115 120 125

His Ser Asp Gly Val Trp Val Asp Arg Ile Pro Ala Trp Ile Lys Tyr
 130 135 140

Ala Thr Val Asp Pro Thr Arg Phe Ala Ala Pro Tyr Asp Gly Val Tyr
 145 150 155 160

Trp Asp Pro Pro Leu Ser Glu Arg Tyr Gln Phe Lys His Pro Arg Pro
 165 170 175

Pro Lys Pro Lys Ala Pro Arg Ile Tyr Glu Ala His Val Gly Met Ser
 180 185 190

Ser Ser Glu Pro Arg Ile Asn Ser Tyr Arg Glu Phe Ala Asp Asp Val
 195 200 205

Leu Pro Arg Ile Arg Glu Asn Asn Tyr Asn Thr Val Gln Leu Met Ala
 210 215 220

Val	Met	Glu	His	Ser	Tyr	Tyr	Ala	Ser	Phe	Trp	Tyr	His	Val	Thr	Lys
225					230					235					240
Pro	Phe	Phe	Ala	Val	Ser	Ser	Arg	Ser	Gly	Ser	Pro	Glu	Asp	Leu	Lys
				245					250					255	
Tyr	Leu	Ile	Asp	Lys	Ala	His	Ser	Leu	Gly	Leu	Asn	Val	Leu	Met	Asp
			260					265					270		
Val	Ile	His	Ser	His	Ala	Ser	Asn	Asn	Val	Thr	Asp	Gly	Leu	Asn	Gly
		275					280					285			
Phe	Asp	Val	Gly	Gln	Ser	Ser	Gln	Gln	Ser	Tyr	Phe	His	Ala	Gly	Asp
	290					295					300				
Arg	Gly	Tyr	His	Lys	Leu	Trp	Asp	Ser	Arg	Leu	Phe	Asn	Tyr	Ala	Asn
305					310					315					320
Trp	Lys	Ser	Ser	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Trp	Trp	Leu	Glu	Glu
				325					330					335	
Tyr	Lys	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr	Ser	Met	Leu	Tyr
			340					345					350		
His	His	His	Gly	Ile	Asn	Met	Ala	Phe	Thr	Gly	Asp	Tyr	Asn	Glu	Tyr
			355				360					365			
Phe	Ser	Glu	Glu	Thr	Asp	Val	Asp	Ala	Val	Val	Tyr	Leu	Met	Leu	Ala
	370					375					380				
Asn	Ser	Leu	Val	His	Asp	Ile	Leu	Pro	Asp	Ala	Thr	Asp	Ile	Ala	Glu
385					390					395					400
Asp	Val	Ser	Gly	Met	Pro	Gly	Leu	Gly	Arg	Pro	Val	Ser	Glu	Val	Gly
				405					410					415	
Ile	Gly	Phe	Asp	Tyr	Arg	Leu	Ala	Met	Ala	Ile	Pro	Asp	Lys	Trp	Ile
			420					425					430		
Asp	Tyr	Leu	Lys	Asn	Lys	Lys	Asp	Ser	Glu	Trp	Ser	Met	Lys	Glu	Ile
		435					440					445			
Ser	Leu	Asn	Leu	Thr	Asn	Arg	Arg	Tyr	Thr	Glu	Lys	Cys	Val	Ser	Tyr
	450					455					460				
Ala	Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys	Thr	Ile	Ala	Phe
465					470					475					480
Leu	Leu	Met	Asp	Glu	Glu	Met	Tyr	Ser	Ser	Met	Ser	Cys	Leu	Thr	Met
				485					490					495	
Leu	Ser	Pro	Thr	Ile	Glu	Arg	Gly	Ile	Ser	Leu	His	Lys	Met	Ile	His
			500					505					510		
Phe	Ile	Thr	Leu	Ala	Leu	Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	Met	Gly
		515					520					525			

Asn Glu Phe Gly His Pro Glu Trp Ile Asp Phe Pro Arg Glu Gly Asn
 530 535 540
 Gly Trp Ser Tyr Glu Lys Cys Arg Leu Thr Gln Trp Asn Leu Val Asp
 545 550 555 560
 Thr Asn His Leu Arg Tyr Lys Phe Met Asn Ala Phe Asp Arg Ala Met
 565 570 575
 Asn Leu Leu Asp Asp Lys Phe Ser Ile Leu Ala Ser Thr Lys Gln Ile
 580 585 590
 Val Ser Ser Thr Asn Asn Glu Asp Lys Val Ile Val Phe Glu Arg Gly
 595 600 605
 Asp Leu Val Phe Val Phe Asn Phe His Pro Glu Asn Thr Tyr Glu Gly
 610 615 620
 Tyr Lys Val Gly Cys Asp Leu Pro Gly Lys Tyr Arg Val Ala Leu Asp
 625 630 635 640
 Ser Asp Ala Thr Glu Phe Gly Gly His Gly Arg Val Gly His Asp Ala
 645 650 655
 Asp Gln Phe Thr Ser Pro Glu Gly Ile Pro Gly Ile Pro Glu Thr Asn
 660 665 670
 Phe Asn Asn Arg Pro Asn Ser Phe Lys Val Leu Ser Pro Pro His Thr
 675 680 685
 Cys Val Val Tyr Tyr Arg Val Asp Glu Arg Gln Glu Glu Ser Asn Asn
 690 695 700
 Pro Asn Leu Gly Ser Val Glu Glu Thr Phe Ala Ala Ala Asp Thr Asp
 705 710 715 720
 Val Ala Arg Ile Pro Asp Val Ser Met Glu Ser Glu Asp Ser Asn Leu
 725 730 735
 Asp Arg Ile Glu Asp Asn Ser Glu Asp Ala Val Asp Ala Gly Ile Leu
 740 745 750
 Lys Val Glu Arg Glu Val Val Gly Asp Asn
 755 760

<210> 26
 <211> 984
 <212> DNA
 <213> Triticum aestivum

<400> 26
 atatgtatga ttatcatggct ctggatagac cttcaactcc tcgcattgat cgtggcatag 60
 cattacataa aatgatcagg cttgtcacca tgggtttagg tggcgaaggc tatcttaact 120
 tcatgggaaa tgagtttggg catcctgaat ggatagattt tccaagaggt ccgcaaactc 180

ttccaaccgg	caaagttctc	cctggaaata	acaatagtta	tgataaatgc	cgccgtagat	240
ttgatcttgg	agatgcagat	tttcttagat	atcgtggtat	gcaagagtcc	gaccaggcaa	300
tgcagcatct	tgaggaaaaa	tatgggttta	tgacatctga	gcaccagtat	gtttcacgga	360
aacatgagga	agataaggtg	atcatcttcg	aaagaggaga	tttggtattc	gttttcaact	420
tccaccggag	caatagcttt	tttgactacc	gtggtgggtg	ttccaggcct	gggaagtaca	480
aggtggcctt	agactccgac	gatgcactct	ttggtggatt	cagcaggctt	gatcatgatg	540
tcgactactt	cacaaccgaa	catccgcatg	acaacaggcc	gcgctctttc	tcggtgtaca	600
ctccgagcag	aactgcggtc	gtgtatgccc	ttacagagta	agaaccagca	gctgcttggt	660
acaaggcaaa	gagagaactc	cagagagctc	gtggatcgtg	agcgaagcga	cgggcaacgg	720
cgcgaggctg	ctctaagcgc	catgactggg	aggggatcgt	gcctcttccc	cagatgccag	780
gaggagcaga	tggataggta	gcttgttggt	gagcgctcga	aagaaaatgg	acgggcctgg	840
gtgtttgtcg	tgctgcacta	ccctcctcct	atcttgcaca	ttcccggttg	tctttgtaca	900
tataactaat	aattgcccg	gcgctcaacg	tgaacatata	aatattctaa	taataggtta	960
tcccgtgaaa	aaaaaaaaaa	aaaa				984

<210> 27
 <211> 977
 <212> DNA
 <213> Triticum aestivum

<400> 27	
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ctggatagac	cttcaactcc
tcgcattgat	cgtggcatag
	60
cattacataa	aatgatcagg
cttgtcacca	tgggtttagg
tggcgaaggc	tatcttaact
	120
tcatgggaaa	tgagtttggg
catcctgaat	ggatagattt
tccaagaggt	ccgcaaactc
	180
ttccaaccgg	caaagttctc
cctggaaata	acaatagtta
tgataaatgc	cgccgtagat
	240
ttgatcttgg	agatgcagat
tttcttagat	atcgtggtat
gcaagagtcc	gaccaggcaa
	300
tgcagcatct	tgaggaaaaa
tatgggttta	tgacatctga
gcaccagtat	gtttcacgga
	360
aacatgagga	agataaggtg
atcatcttcg	aaagaggaga
tttggtattt	gttttcaact
	420
tccactggag	caatagcttt
tttgactacc	gtggtgggtg
ttccaagcct	gggaagtaca
	480
aggtggcctt	agactccgac
gatgcactct	ttggtggatt
cagcaggctt	gatcatgatg
	540
tcgactactt	cacaaccgaa
catccgcatg	acaataggcc
gcgctctttc	ttggtgtaca
	600
ctcctagcag	aactgcggtc
gtgtatgccc	ttacagagta
agaaccagca	gcggcttggt
	660

acaaggcaaa gagagaactc cagggagctc gtggattgtg agcgaagcga cgggcaactg 720
 cgtgaggctg ctctaagcgc catgactggg aggggatcgt gcctcttccc ctgatgccag 780
 gaggatcaga tggataggta gcttggttggg gagcgctcga aagaaaatgg acgggcctgg 840
 gtgtttgtcg tgctgcactt aaccctcctc ctatgttgca cattcccggg tgttttttgta 900
 catataacta ataattgccc gtgcgcttca acatgaacat ataaatattc tatataaaaa 960
 aaaaaaaaaa aaaaaaa 977

<210> 28
 <211> 212
 <212> PRT
 <213> Triticum aestivum

<400> 28

Met	Tyr	Asp	Phe	Met	Ala	Leu	Asp	Arg	Pro	Ser	Thr	Pro	Arg	Ile	Asp	1	5	10	15
Arg	Gly	Ile	Ala	Leu	His	Lys	Met	Ile	Arg	Leu	Val	Thr	Met	Gly	Leu	20	25	30	
Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	Met	Gly	Asn	Glu	Phe	Gly	His	Pro	35	40	45	
Glu	Trp	Ile	Asp	Phe	Pro	Arg	Gly	Pro	Gln	Thr	Leu	Pro	Thr	Gly	Lys	50	55	60	
Val	Leu	Pro	Gly	Asn	Asn	Asn	Ser	Tyr	Asp	Lys	Cys	Arg	Arg	Arg	Phe	65	70	75	80
Asp	Leu	Gly	Asp	Ala	Asp	Phe	Leu	Arg	Tyr	Arg	Gly	Met	Gln	Glu	Phe	85	90	95	
Asp	Gln	Ala	Met	Gln	His	Leu	Glu	Glu	Lys	Tyr	Gly	Phe	Met	Thr	Ser	100	105	110	
Glu	His	Gln	Tyr	Val	Ser	Arg	Lys	His	Glu	Glu	Asp	Lys	Val	Ile	Ile	115	120	125	
Phe	Glu	Arg	Gly	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe	His	Trp	Ser	Asn	130	135	140	
Ser	Phe	Phe	Asp	Tyr	Arg	Val	Gly	Cys	Ser	Lys	Pro	Gly	Lys	Tyr	Lys	145	150	155	160
Val	Ala	Leu	Asp	Ser	Asp	Asp	Ala	Leu	Phe	Gly	Gly	Phe	Ser	Arg	Leu	165	170	175	
Asp	His	Asp	Val	Asp	Tyr	Phe	Thr	Thr	Glu	His	Pro	His	Asp	Asn	Arg	180	185	190	

Pro Arg Ser Phe Leu Val Tyr Thr Pro Ser Arg Thr Ala Val Val Tyr
 195 200 205

Ala Leu Thr Glu
 210

<210> 29
 <211> 212
 <212> PRT
 <213> Zea mays

<400> 29

Met Tyr Asp Phe Met Ala Leu Asp Arg Pro Ser Thr Pro Thr Ile Asp
 1 5 10 15

Arg Gly Ile Ala Leu His Lys Met Ile Arg Leu Ile Thr Met Gly Leu
 20 25 30

Gly Gly Glu Gly Tyr Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro
 35 40 45

Glu Trp Ile Asp Phe Pro Arg Gly Pro Gln Arg Leu Pro Ser Gly Lys
 50 55 60

Phe Ile Pro Gly Asn Asn Asn Ser Tyr Asp Lys Cys Arg Arg Arg Phe
 65 70 75 80

Asp Leu Gly Asp Ala Asp Tyr Leu Arg Tyr His Gly Met Gln Glu Phe
 85 90 95

Asp Gln Ala Met Gln His Leu Glu Gln Lys Tyr Glu Phe Met Thr Ser
 100 105 110

Asp His Gln Tyr Ile Ser Arg Lys His Glu Glu Asp Lys Val Ile Val
 115 120 125

Phe Glu Lys Gly Asp Leu Val Phe Val Phe Asn Phe His Cys Asn Asn
 130 135 140

Ser Tyr Phe Asp Tyr Arg Ile Gly Cys Arg Lys Pro Gly Val Tyr Lys
 145 150 155 160

Val Val Leu Asp Ser Asp Ala Gly Leu Phe Gly Gly Phe Ser Arg Ile
 165 170 175

His His Ala Ala Glu His Phe Thr Ala Asp Cys Ser His Asp Asn Arg
 180 185 190

Pro Tyr Ser Phe Ser Val Tyr Thr Pro Ser Arg Thr Cys Val Val Tyr
 195 200 205

Ala Pro Val Glu
 210

<210> 30
 <211> 216
 <212> PRT
 <213> Zea mays

<400> 30

Met	Tyr	Asp	Phe	Met	Ala	Leu	Asp	Arg	Pro	Ser	Thr	Pro	Arg	Ile	Asp
1				5					10					15	
Arg	Gly	Ile	Ala	Leu	His	Lys	Met	Ile	Arg	Leu	Val	Thr	Met	Gly	Leu
			20					25					30		
Gly	Gly	Glu	Gly	Tyr	Leu	Asn	Phe	Met	Gly	Asn	Glu	Phe	Gly	His	Pro
		35					40					45			
Glu	Trp	Ile	Asp	Phe	Pro	Arg	Gly	Pro	Gln	Ser	Leu	Pro	Asn	Gly	Ser
	50					55					60				
Val	Ile	Pro	Gly	Asn	Asn	Asn	Ser	Phe	Asp	Lys	Cys	Arg	Arg	Arg	Phe
65					70					75					80
Asp	Leu	Gly	Asp	Ala	Asp	Tyr	Leu	Arg	Tyr	Arg	Gly	Met	Gln	Glu	Phe
				85					90					95	
Asp	Gln	Ala	Met	Gln	His	Leu	Glu	Gly	Lys	Tyr	Glu	Phe	Met	Thr	Ser
			100					105					110		
Asp	His	Ser	Tyr	Phe	Ser	Arg	Lys	His	Glu	Glu	Asp	Lys	Val	Ile	Ile
		115					120					125			
Phe	Glu	Arg	Gly	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe	His	Trp	Ser	Asn
	130					135					140				
Ser	Tyr	Phe	Asp	Tyr	Arg	Val	Gly	Cys	Phe	Lys	Pro	Gly	Lys	Tyr	Lys
145					150					155					160
Ile	Val	Leu	Asp	Ser	Asp	Asp	Gly	Leu	Phe	Gly	Gly	Phe	Ser	Arg	Leu
				165					170					175	
Asp	His	Asp	Ala	Glu	Tyr	Phe	Thr	Ala	Asp	Trp	Pro	His	Asp	Asn	Arg
			180					185					190		
Pro	Cys	Ser	Phe	Ser	Val	Tyr	Ala	Pro	Ser	Arg	Thr	Ala	Val	Val	Tyr
		195					200					205			
Ala	Pro	Ala	Gly	Ala	Glu	Asp	Glu								
	210					215									

<210> 31
 <211> 217
 <212> DNA
 <213> Zea mays

<400> 31

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ttccaaaacc ggcagatgca tgcattgcatg ctacaataag gttctgatac tttaatcgat 120
 gctggaaagc ccatgcatct cgctgcgttg tcctctctat atatataaga ccttcaaggt 180
 gtcaattaaa catagagttt tcgtttttcg ctttcct 217

<210> 32
 <211> 686
 <212> PRT
 <213> Triticum aestivum

<400> 32

Met	Leu	Cys	Leu	Ser	Ser	Ser	Leu	Leu	Pro	Arg	Pro	Ser	Ala	Ala	Ala			
1				5					10					15				
Asp	Arg	Pro	Leu	Pro	Gly	Ile	Ile	Ala	Gly	Gly	Gly	Gly	Gly	Lys	Arg			
			20					25						30				
Leu	Ser	Val	Val	Pro	Ser	Val	Pro	Phe	Leu	Leu	Arg	Trp	Leu	Trp	Pro			
		35					40					45						
Arg	Lys	Ala	Lys	Ser	Lys	Ser	Phe	Val	Ser	Val	Thr	Ala	Arg	Gly	Asn			
	50					55					60							
Lys	Ile	Ala	Ala	Thr	Thr	Gly	Tyr	Gly	Ser	Asp	His	Leu	Pro	Ile	Tyr			
65					70					75					80			
Asp	Leu	Asp	Leu	Lys	Leu	Ala	Glu	Phe	Lys	Asp	His	Phe	Asp	Tyr	Thr			
				85					90					95				
Arg	Asn	Arg	Tyr	Ile	Glu	Gln	Lys	His	Leu	Ile	Glu	Lys	His	Glu	Gly			
			100					105					110					
Ser	Leu	Glu	Glu	Phe	Ser	Lys	Gly	Tyr	Leu	Lys	Phe	Gly	Ile	Asn	Thr			
		115					120					125						
Glu	His	Gly	Ala	Ser	Val	Tyr	Arg	Glu	Trp	Ala	Pro	Ala	Ala	Glu	Glu			
	130					135					140							
Ala	Gln	Leu	Val	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Gly	Ser	Gly	His	Lys			
145					150					155					160			
Met	Ala	Lys	Asp	Asn	Phe	Gly	Val	Trp	Ser	Ile	Arg	Ile	Ser	His	Val			
				165					170					175				
Asn	Gly	Lys	Pro	Ala	Ile	Pro	His	Asn	Ser	Lys	Val	Lys	Phe	Arg	Phe			
			180					185					190					
Arg	His	His	Gly	Val	Trp	Val	Glu	Gln	Ile	Pro	Ala	Trp	Ile	Arg	Tyr			
		195					200					205						
Ala	Thr	Val	Thr	Ala	Ser	Glu	Ser	Gly	Ala	Pro	Tyr	Asp	Gly	Leu	His			
	210					215					220							

Trp	Asp	Pro	Pro	Ser	Ser	Glu	Arg	Tyr	Val	Phe	Asn	His	Pro	Arg	Pro			
225					230					235					240			
Pro	Lys	Pro	Asp	Val	Pro	Arg	Ile	Tyr	Glu	Ala	His	Val	Gly	Val	Ser			
				245					250						255			
Gly	Gly	Lys	Leu	Glu	Ala	Gly	Thr	Tyr	Arg	Glu	Phe	Pro	Asp	Asn	Val			
			260					265					270					
Leu	Pro	Cys	Leu	Arg	Ala	Thr	Asn	Tyr	Asn	Thr	Val	Gln	Leu	Met	Gly			
		275					280					285						
Ile	Met	Glu	His	Ser	Asp	Ser	Ala	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn			
	290					295					300							
Phe	Phe	Ala	Val	Ser	Ser	Arg	Ser	Gly	Thr	Pro	Glu	Asp	Leu	Lys	Tyr			
305					310					315					320			
Leu	Ile	Asp	Lys	Ala	His	Ser	Leu	Gly	Leu	Arg	Val	Leu	Met	Asp	Val			
				325					330					335				
Val	His	Ser	His	Ala	Ser	Asn	Asn	Val	Ile	Asp	Gly	Leu	Asn	Gly	Tyr			
			340					345					350					
Asp	Val	Gly	Gln	Ser	Ala	His	Glu	Ser	Tyr	Phe	Tyr	Thr	Gly	Asp	Lys			
		355					360					365						
Gly	Tyr	Asn	Lys	Met	Trp	Asn	Gly	Arg	Met	Phe	Asn	Tyr	Ala	Asn	Trp			
	370					375					380							
Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Tyr	Trp	Met	Asp	Glu			
385					390					395					400			
Phe	Met	Phe	Asp	Gly	Phe	Arg	Phe	Val	Gly	Val	Thr	Ser	Met	Leu	Tyr			
				405					410					415				
Asn	His	Asn	Gly	Ile	Asn	Met	Ser	Phe	Asn	Gly	Asn	Tyr	Lys	Asp	Tyr			
			420					425					430					
Ile	Gly	Leu	Asp	Thr	Asn	Val	Asp	Ala	Phe	Val	Tyr	Met	Met	Leu	Ala			
		435					440					445						
Asn	His	Leu	Met	His	Lys	Leu	Phe	Pro	Glu	Ala	Ile	Val	Val	Ala	Val			
	450					455					460							
Asp	Val	Ser	Gly	Met	Pro	Val	Leu	Cys	Trp	Pro	Val	Asp	Glu	Gly	Gly			
465					470					475				480				
Leu	Gly	Phe	Asp	Tyr	Arg	Gln	Ala	Met	Thr	Ile	Pro	Asp	Arg	Trp	Ile			
				485					490					495				
Asp	Tyr	Leu	Glu	Asn	Lys	Gly	Asp	Gln	Gln	Trp	Ser	Met	Ser	Ser	Val			
			500					505					510					
Ile	Ser	Gln	Thr	Leu	Thr	Asn	Arg	Arg	Tyr	Pro	Glu	Lys	Phe	Ile	Ala			
		515					520					525						

Tyr Ala Glu Arg Gln Asn His Ser Ile Ile Gly Ser Lys Thr Met Ala
 530 535 540
 Phe Leu Leu Met Glu Trp Glu Thr Tyr Ser Gly Met Ser Ala Met Asp
 545 550 555 560
 Pro Asp Ser Pro Thr Ile Asp Arg Ala Ile Ala Leu Gln Lys Met Ile
 565 570 575
 His Phe Ile Thr Met Ala Phe Gly Gly Asp Ser Tyr Leu Lys Phe Met
 580 585 590
 Gly Asn Glu Tyr Met Asn Ala Phe Val Gln Ala Val Asp Thr Pro Ser
 595 600 605
 Asp Lys Cys Ser Phe Leu Ser Ser Ser Asn Gln Thr Ala Ser His Met
 610 615 620
 Asn Glu Glu Glu Lys Gly Ser Ala Leu Thr Lys Gly Tyr Thr His Leu
 625 630 635 640
 Arg Ser Gly Cys Phe Asp Pro Ser Leu Pro Ser Thr Ser Ser Cys Ala
 645 650 655
 Phe Leu Gly Pro Ser Asn Gln Ser Pro Phe Ser Lys Pro Phe Ile Gly
 660 665 670
 Phe Pro Gly Cys Ile Phe Cys Cys Gly Leu Phe Lys Gly Glu
 675 680 685

<210> 33
 <211> 830
 <212> PRT
 <213> Triticum aestivum

<400> 33

Met Leu Cys Leu Thr Ala Pro Ser Cys Ser Pro Ser Leu Pro Pro Arg
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 Pro Ser Arg Pro Ala Ala Asp Arg Pro Gly Pro Gly Ile Ser Gly Gly
 20 25 30
 Gly Asn Val Arg Leu Ser Ala Val Pro Ala Pro Ser Ser Leu Arg Trp
 35 40 45
 Ser Trp Pro Arg Lys Ala Lys Ser Lys Phe Ser Val Pro Val Ser Ala
 50 55 60
 Pro Arg Asp Tyr Thr Met Ala Thr Ala Glu Asp Gly Val Gly Asp Leu
 65 70 75 80
 Pro Ile Tyr Asp Leu Asp Pro Lys Phe Ala Gly Phe Lys Glu His Phe
 85 90 95
 Ser Tyr Arg Met Lys Lys Tyr Leu Asp Gln Lys His Ser Ile Glu Lys

100						105						110					
His	Glu	Gly	Gly	Leu	Glu	Glu	Phe	Ser	Lys	Gly	Tyr	Leu	Lys	Phe	Gly		
		115					120					125					
Ile	Asn	Thr	Glu	Asn	Asp	Ala	Thr	Val	Tyr	Arg	Glu	Trp	Ala	Pro	Ala		
	130					135					140						
Ala	Met	Asp	Ala	Gln	Leu	Ile	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Gly	Ser		
145					150					155					160		
Gly	His	Arg	Met	Thr	Lys	Asp	Asn	Tyr	Gly	Val	Trp	Ser	Ile	Arg	Ile		
				165					170					175			
Ser	His	Val	Asn	Gly	Lys	Pro	Ala	Ile	Pro	His	Asn	Ser	Lys	Val	Lys		
			180					185					190				
Phe	Arg	Phe	His	Arg	Gly	Asp	Gly	Leu	Trp	Val	Asp	Arg	Val	Pro	Ala		
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Trp	Ile	Arg	Tyr	Ala	Thr	Phe	Asp	Ala	Ser	Lys	Phe	Gly	Ala	Pro	Tyr		
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225					230					235					240		
His	Pro	Arg	Pro	Arg	Lys	Pro	Asp	Ala	Pro	Arg	Ile	Tyr	Glu	Ala	His		
				245					250					255			
Val	Gly	Met	Ser	Gly	Glu	Lys	Pro	Glu	Val	Ser	Thr	Tyr	Arg	Glu	Phe		
			260					265					270				
Ala	Asp	Asn	Val	Leu	Pro	Arg	Ile	Lys	Ala	Asn	Asn	Tyr	Asn	Thr	Val		
		275					280					285					
Gln	Leu	Met	Ala	Ile	Met	Glu	His	Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr		
	290					295					300						
His	Val	Thr	Asn	Phe	Phe	Ala	Val	Ser	Ser	Arg	Ser	Gly	Thr	Pro	Glu		
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Asp	Leu	Lys	Tyr	Leu	Val	Asp	Lys	Ala	His	Ser	Leu	Gly	Leu	Arg	Val		
				325					330					335			
Leu	Met	Asp	Val	Val	His	Ser	His	Ala	Ser	Ser	Asn	Lys	Thr	Asp	Gly		
			340					345					350				
Leu	Asn	Gly	Tyr	Asp	Val	Gly	Gln	Asn	Thr	Gln	Glu	Ser	Tyr	Phe	His		
		355					360					365					
Thr	Gly	Glu	Arg	Gly	Tyr	His	Lys	Leu	Trp	Asp	Ser	Arg	Leu	Phe	Asn		
	370					375					380						
Tyr	Ala	Asn	Trp	Glu	Val	Leu	Arg	Phe	Leu	Leu	Ser	Asn	Leu	Arg	Tyr		
385					390					395					400		
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405					410					415					
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			420					425					430		
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Leu	Met	Leu	Ala	Asn	His	Leu	Met	His	Lys	Leu	Leu	Pro	Glu	Ala	Thr
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Val	Val	Ala	Glu	Asp	Val	Ser	Gly	Met	Pro	Val	Leu	Cys	Arg	Ser	Val
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Asp	Glu	Gly	Gly	Val	Gly	Phe	Asp	Tyr	Arg	Leu	Ala	Met	Ala	Ile	Pro
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Cys	Ile	Ala	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ser	Ile	Val	Gly	Asp	Lys
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Asp	Leu	Gln	Pro	Ala	Ser	Pro	Thr	Ile	Asp	Arg	Gly	Ile	Ala	Leu	Gln
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Lys	Met	Ile	His	Phe	Ile	Thr	Met	Ala	Leu	Gly	Gly	Asp	Gly	Tyr	Leu
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	610					615					620				
Leu	Ala	Asp	Ile	Asp	His	Leu	Arg	Tyr	Lys	Tyr	Met	Asn	Ala	Phe	Asp
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His	Asp	Asn	Asp	His	Phe	Thr	Ser	Pro	Glu	Gly	Val	Pro	Gly	Val	Pro
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Glu	Thr	Asn	Phe	Asn	Asn	Arg	Pro	Asn	Ser	Phe	Lys	Ile	Leu	Ser	Pro
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Ile	Asp	Val	Glu	Ala	Thr	Gly	Val	Lys	Asp	Ala	Ala	Asp	Gly	Glu	Ala
785					790					795					800
Thr	Ser	Gly	Ser	Glu	Lys	Ala	Ser	Thr	Gly	Gly	Asp	Ser	Ser	Lys	Lys
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 <211> 818
 <212> PRT
 <213> Triticum aestivum

<400> 34

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Arg	Ala	Ala	Ser	Pro	Gly	Lys	Val	Leu	Val	Pro	Asp	Gly	Glu	Ser	Asp
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Ile	Glu	Glu	Gln	Thr	Ala	Glu	Val	Asn	Met	Thr	Gly	Gly	Thr	Ala	Glu
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Lys	Leu	Glu	Ser	Ser	Glu	Pro	Thr	Gln	Gly	Ile	Val	Glu	Thr	Ile	Thr
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Pro	Thr	Leu	Lys	Asp	Phe	Arg	Ser	His	Leu	Asp	Tyr	Arg	Tyr	Ser	Glu	145	150	155	160
Tyr	Arg	Arg	Ile	Arg	Ala	Ala	Ile	Asp	Gln	His	Glu	Gly	Gly	Leu	Glu	165	170		175
Ala	Phe	Ser	Arg	Gly	Tyr	Glu	Lys	Leu	Gly	Phe	Thr	Arg	Ser	Ala	Glu	180	185		190
Gly	Ile	Thr	Tyr	Arg	Glu	Trp	Ala	Pro	Gly	Ala	His	Ser	Ala	Ala	Leu	195	200		205
Val	Gly	Asp	Phe	Asn	Asn	Trp	Asn	Pro	Asn	Ala	Asp	Thr	Met	Thr	Arg	210	215		220
Asp	Asp	Tyr	Gly	Val	Trp	Glu	Ile	Phe	Leu	Pro	Asn	Asn	Ala	Asp	Gly	225	230		235
Ser	Pro	Ala	Ile	Pro	His	Gly	Ser	Arg	Val	Lys	Ile	Arg	Met	Asp	Thr	245	250		255
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Gln	Ala	Pro	Gly	Glu	Ile	Pro	Phe	Asn	Gly	Ile	Tyr	Tyr	Asp	Pro	Pro	275	280		285
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Ser	Leu	Arg	Ile	Tyr	Glu	Ser	His	Ile	Gly	Met	Ser	Ser	Pro	Glu	Pro	305	310		315
Lys	Ile	Asn	Ser	Tyr	Ala	Asn	Phe	Arg	Asp	Glu	Val	Leu	Pro	Arg	Ile	325	330		335
Lys	Arg	Leu	Gly	Tyr	Asn	Ala	Val	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	340	345		350
Ser	Tyr	Tyr	Ala	Ser	Phe	Gly	Tyr	His	Val	Thr	Asn	Phe	Phe	Ala	Pro	355	360		365
Ser	Ser	Arg	Phe	Gly	Thr	Pro	Glu	Asp	Leu	Lys	Ser	Leu	Ile	Asp	Arg	370	375		380
Ala	His	Glu	Leu	Gly	Leu	Ile	Val	Leu	Met	Asp	Ile	Val	His	Ser	His	385	390		395
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Thr	His	Tyr	Phe	His	Gly	Gly	Pro	Arg	Gly	His	His	Trp	Met	Trp	Asp	420	425		430
Ser	Arg	Leu	Phe	Asn	Tyr	Gly	Ser	Trp	Glu	Val	Leu	Arg	Phe	Leu	Leu	435	440		445

Ser	Asn	Ala	Arg	Trp	Trp	Leu	Glu	Glu	Tyr	Lys	Phe	Asp	Gly	Phe	Arg	
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Trp	Leu	Glu	Lys	Cys	Val	Thr	Tyr	Ala	Glu	Ser	His	Asp	Gln	Ala	Leu	
			580					585					590			
Val	Gly	Asp	Lys	Thr	Ile	Ala	Phe	Trp	Leu	Met	Asp	Lys	Asp	Met	Tyr	
		595					600					605				
Asp	Phe	Met	Ala	Leu	Asp	Arg	Pro	Ser	Thr	Pro	Arg	Ile	Asp	Arg	Gly	
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Ile	Ala	Leu	His	Lys	Met	Ile	Arg	Leu	Val	Thr	Met	Gly	Leu	Gly	Gly	
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Glu	Gly	Tyr	Leu	Asn	Phe	Met	Gly	Asn	Glu	Phe	Gly	His	Pro	Glu	Trp	
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Ile	Asp	Phe	Pro	Arg	Gly	Pro	Gln	Thr	Leu	Pro	Thr	Gly	Lys	Val	Leu	
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Pro	Gly	Asn	Asn	Asn	Ser	Tyr	Asp	Lys	Cys	Arg	Arg	Arg	Phe	Asp	Leu	
		675					680					685				
Gly	Asp	Ala	Asp	Phe	Leu	Arg	Tyr	His	Gly	Met	Gln	Glu	Phe	Asp	Gln	
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Ala	Met	Gln	His	Leu	Glu	Glu	Lys	Tyr	Gly	Phe	Met	Thr	Ser	Glu	His	
705					710					715					720	
Gln	Tyr	Val	Ser	Arg	Lys	His	Glu	Glu	Asp	Lys	Val	Ile	Ile	Phe	Glu	
				725					730					735		
Arg	Gly	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe	His	Trp	Ser	Asn	Ser	Phe	
			740					745					750			

Phe Asp Tyr Arg Val Gly Cys Ser Arg Pro Gly Lys Tyr Lys Val Ala
 755 760 765

Leu Asp Ser Asp Asp Ala Leu Phe Gly Gly Phe Ser Arg Leu Asp His
 770 775 780

Asp Val Asp Tyr Phe Thr Thr Glu His Pro His Asp Asn Arg Pro Arg
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Ser Phe Ser Val Tyr Thr Pro Ser Arg Thr Ala Val Val Tyr Ala Leu
 805 810 815

Thr Glu

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 <211> 813
 <212> DNA
 <213> Escherichia coli

<400> 35
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 tgttccggct gtcagcgcag gggcgcccgg ttctttttgt caagaccgac ctgtccgggtg 180
 ccctgaatga actgcaggac gaggcagcgc ggctatcgtg gctggccacg acgggcgttc 240
 cttgcgcagc tgtgctcgac gttgtcactg aagcgggaag ggactggctg ctattgggcg 300
 aagtgccggg gcaggatctc ctgtcatctc accttgctcc tgccgagaaa gtatccatca 360
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 aagcgaaaca tcgcatcgag cgagcacgta ctcggatgga agccgggtctt gtcgatcagg 480
 atgatctgga cgaagagcat caggggctcg cgccagccga actgttcgcc aggctcaagg 540
 cgcgcatgcc cgacggcgag gatctcgtcg tgacccatgg cgatgcctgc ttgccgaata 600
 tcatggtgga aatggccgc ttttctggat tcatcgactg tggccggctg ggtgtggcgg 660
 accgctatca ggacatagcg ttggctaccc gtgatattgc tgaagagctt ggcggcgaat 720
 gggctgaccg cttcctcgtg ctttacggta tcgccgctcc cgattcgcag cgcatcgcct 780
 tctatcgctt tcttgacgag ttcttctgag ctc 813

<210> 36
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 <212> PRT
 <213> Triticum aestivum

<400> 36

Met Asp Lys Asp Met Tyr Asp
1 5

<210> 37

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 37

aaggatccgt cgacatcgat aatacgactc actataggga 40

<210> 38

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 38

aaggatccgt cgacatc 17

<210> 39

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

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<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 40

ttttcttcac aacgccctgg g 21

<210> 41

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 41

tgtttgggag atcttcctcc c

21

<210> 42

<211> 8

<212> PRT

<213> Triticum aestivum

<400> 42

Gly Val Trp Glu Ile Phe Leu Pro
1 5

<210> 43

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 43

cgggatcccg

10

<210> 44

<211> 34

<212> DNA

<213> Artificial Sequence

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<210> 47
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<400> 48
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<220>
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<210> 50
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<220>
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<400> 50
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<210> 51
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 51
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<210> 52
 <211> 2037
 <212> DNA
 <213> Zea mays

<400> 52
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 tgtcacactt gtttgaagtg cagtttatct atctttatac atatatttaa actttactct 180
 acgaataata taatctatag tactacaata atatcagtgt tttagagaat catataaatg 240
 aacagttaga catggtctaa aggacaattg gtattttgac aacaggactc tacagtttta 300
 tcttttttagt gtgcatgtgt tctccttttt ttttttgcaa atagcttcac ctatataata 360
 cttcatccat ttatttagta catccattta gggtttaggg ttaatggttt ttatagacta 420
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 aattaaacaa atacccttta agaaattaaa aaaactaagg aaacattttt cttgtttcga 600
 gtagataatg ccagcctggt aaacgccgtc gacgcagtct aacggacacc aaccagcgaa 660
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<210> 53
 <211> 1085
 <212> DNA
 <213> *Triticum aestivum*

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 ttatgggaaa tgagtttggg catcctgaat ggatagattt tccaagaggc ccacaagttc 180
 ttccaactgg taagtttctc cctggaaata acaatagtta tgataaatgc cgtcgtagat 240
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 aacatgagga agataaggtg atcgtgtttg aaagagggga tttggtattt gttttcaact 420
 tccactggag taatagcttt tttgactacc gtgttgggtg tttcaagcct ggggaagtaca 480
 aggtggtctt agactccgac gctggactct ttggtggatt tggtaggctt gatcatgctg 540
 tcgagtactt cacttctgac tgtccgcatg acaacaggcc gcattctttc tcggtgtaca 600


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<210> 54
<211> 888
<212> PRT
<213> Triticum aestivum

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<223> Xaa = any amino acid

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<220>
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<400> 54

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Met Leu Cys Leu Ser Xaa Ser Leu Leu Pro Arg Pro Ser Arg Ala Ala
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Ala Asp Arg Pro Xaa Leu Pro Gly Ile Xaa Gly Gly Gly Xaa Xaa Arg
20           25           30
Leu Ser Ala Val Pro Ala Pro Xaa Xaa Leu Arg Trp Xaa Trp Pro Arg
35           40           45
Lys Ala Lys Ser Lys Ser Ser Val Pro Val Xaa Ala Xaa Xaa Xaa Xaa
50           55           60
Ile Xaa Ala Thr Xaa Xaa Xaa Gly Val Xaa Xaa Leu Pro Ile Tyr Asp
65           70           75           80
Leu Asp Pro Lys Leu Ala Xaa Phe Lys Xaa His Phe Asp Tyr Arg Xaa
85           90           95

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Xaa Xaa Tyr Xaa Xaa Gln Lys His Xaa Ile Glu Lys His Glu Gly Gly
 100 105 110
 Leu Glu Glu Phe Ser Lys Gly Tyr Leu Lys Phe Gly Ile Asn Thr Glu
 115 120 125
 Xaa Xaa Ala Xaa Val Tyr Arg Glu Trp Ala Pro Ala Ala Xaa Xaa Ala
 130 135 140
 Gln Leu Val Gly Asp Phe Asn Asn Trp Asn Gly Ser Gly His Xaa Met
 145 150 155 160
 Thr Lys Asp Asn Phe Gly Val Trp Ser Ile Arg Leu Ser Asn Asn Ala
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 Asp Gly Ser Pro Ala Ile Pro His Gly Ser Lys Val Lys Phe Arg Phe
 180 185 190
 Asp Thr Pro Ser Gly Val Trp Val Asp Ser Ile Pro Ala Trp Ile Lys
 195 200 205
 Tyr Ala Val Gln Thr Ala Gly Glu Ile Gly Ala Pro Tyr Asp Gly Ile
 210 215 220
 His Tyr Asp Pro Pro Ser Glu Glu Lys Tyr Val Phe Lys His Pro Gln
 225 230 235 240
 Pro Lys Lys Pro Asp Ser Leu Arg Ile Tyr Glu Ala His Val Gly Met
 245 250 255
 Ser Gly Pro Glu Pro Glu Ile Asn Thr Tyr Ala Glu Phe Arg Asp Glu
 260 265 270
 Val Leu Pro Arg Ile Lys Ala Leu Gly Tyr Asn Ala Val Gln Leu Met
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 Ala Ile Gln Glu His Ser Tyr Tyr Ala Ser Phe Gly Tyr His Val Thr
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 305 310 315 320
 Ser Leu Ile Asp Lys Ala His Ser Leu Gly Leu Arg Val Leu Met Asp
 325 330 335
 Val Val His Ser His Ala Ser Asn Asn Thr Leu Asp Gly Leu Asn Gly
 340 345 350
 Phe Asp Val Gly Gln Gly Thr Asp Thr Ser Tyr Phe His Gly Gly Xaa
 355 360 365
 Arg Gly His His Lys Met Trp Asp Ser Arg Leu Phe Asn Tyr Gly Asn
 370 375 380
 Trp Glu Val Leu Arg Phe Leu Leu Ser Asn Ala Arg Tyr Trp Leu Asp
 385 390 395 400

Glu Phe Lys Phe Asp Gly Phe Arg Phe Asp Gly Val Thr Ser Met Leu
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 Tyr Thr His His Gly Leu Asn Met Ser Phe Thr Gly Ser Tyr Lys Glu
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 Tyr Phe Gly Leu Ala Thr Asp Val Asp Ala Val Val Tyr Leu Met Leu
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 Glu Asp Val Ser Gly Met Pro Val Leu Cys Xaa Pro Val Asp Glu Gly
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 Gly Val Gly Phe Asp Tyr Arg Leu Ala Met Ala Val Ala Asp Lys Trp
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 Ile Asp Leu Leu Lys Asn Lys Asp Asp Xaa Trp Ser Met Gly Xaa Ile
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 625 630 635 640
 Asn Ala Phe Asp Gln Ala Met Gln His Leu Glu Asp Lys Tyr Gly Phe
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 Leu Ser Ser Ser His Gln Tyr Val Ser Arg Lys Asn Glu Glu Asp Lys
 660 665 670
 Val Ile Val Phe Glu Lys Gly Asp Leu Val Phe Val Phe Asn Phe His
 675 680 685
 Trp Ser Asn Ser Tyr Phe Asp Tyr Arg Val Gly Cys Xaa Xaa Pro Gly
 690 695 700

Lys Tyr Lys Val Ala Leu Asp Ser Asp Ala Xaa Leu Phe Gly Gly Phe
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 Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Pro Xaa Ile Xaa Phe Xaa
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